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Final report

OWMC
Ontario Waste Management Corporation
A provincial crown corporation

ier
Institute of Environmental Research Inc.

SITE ASSESSMENT
PHASE 4B:
SOCIAL IMPACT

Prepared for
The Ontario Waste Management Corporation

Submitted by

Institute of Environmental Research Inc.

March, 1988

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INSTITUTE OF
ENVIRONMENTAL
RESEARCH (1985) INC.

March 1, 1988

Ontario Waste Management Corporation
2 Bloor Street West
11th Floor
Toronto, Ontario
M4W 3E2

Attention: Mr. J. G. Micak

Re: Site Assessment, Phase 4B: Social Impact

Dear Sirs:

We are pleased to submit our final report concerning the Social Impact Assessment for Phase 4B.

This report documents the findings of our social impact assessment carried out for OWMC's proposed hazardous waste management facility at the preferred site in the Township of West Lincoln.

The potential social impacts have been identified for the construction, operation and decommissioning phases of the facility. Impact management measures, including a monitoring program, have been recommended to minimize the potential impacts.

Yours truly,

Dr. Peter Homenuck, MCIP
Partner

PH:cr

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EXECUTIVE SUMMARY

PURPOSE OF THE REPORT

Social impacts are alterations that occur in people's living conditions as a result of the development and implementation of a new policy, program or project. Although the nature of such changes may be positive or negative, real or perceived, they are experienced by those affected as significant alterations in the existing social milieu. Social impact assessment attempts to describe the social changes that are the direct or indirect effects of a proposed policy, program or project.

The need to consider the potential social impacts of siting a waste management facility is recognized by the Ontario Waste Management Corporation (OWMC) and is an integral part of the Facilities Development Process. During the site assessment phase of the process, the social consultants were engaged in assessing the probable impacts of facility development on the preferred site brought forward from Phase 4A (formerly known as Site LF9C in the Township of West Lincoln). This report documents the social impact assessment which contributed to the environmental assessment of the preferred site.

SCOPE AND METHOD

Two categories of social impacts are considered in the social impact assessment of the preferred site. Standard impacts are the direct and indirect results of the changes to the environment brought about by the construction and operation of the facility. Special impacts result from the perceptions of the facility and/or the risk associated with the facility. The actions and behaviour taken by individuals in response to their fears and concerns (such as voluntary moving) are the special impacts. The special impacts could affect the residents, community and recreation features and the community as a whole.

The potential impacts were considered within three factor groupings:

- Impacts on Residents
- Impacts on Community and Recreation Features
- Impacts on Community and Region

The factor groupings were refined into factors developed to reflect types of potential impacts in the study areas. Within the factor grouping 'Impacts on Residents' the factors are:

- displacement of residents on-site
- disruption of day-to-day activities and/or the use and enjoyment of property
- stress
- satisfaction with community

Within the factor grouping 'Impacts on Community and Recreation Features' the factor is:

- disruption of operations of community and recreation features

Within the factor grouping 'Impacts on Community and Region' the factors are:

- community stability
- community cohesion
- community character

The assessment of the impacts were applied to the following study areas:

- site
- local community
- adjacent to the access route
- 0-150 metre study area along the access route
- 150-500 metre study area along the access route
- nearby municipalities and the region

Several impact zones, relating to specific impacts, were applied to assist in the assessment of the disruption of day-to-day activities and/or the use and enjoyment of property (residents) and the disruption of operations (community and recreation features):

- noise impact zones
- visual impact zones
- dust impact zones
- lighting impact zones
- cumulative impact zone

The existing social conditions were documented on-site in the local community and region and along the access route. The existing conditions provided a baseline against which social impacts were assessed. The potential social impacts were assessed using inputs from other study team consultants where relevant. The assessments were made in two steps: the first assumed no mitigation measures, and the second, implementation of mitigation. Recommendations with respect to impact management measures, including monitoring, were then made to address the residual impacts.

The impact assessment included evaluation over the construction, operations and decommissioning and post-closure phases of the proposal. Facility operation at 150,000 tonnes/annum (t/a) capacity was assumed; a sensitivity analysis was undertaken to assess the social implications of facility operation at 300,000 t/a.

Where possible, the social impacts were assessed quantitatively. However to a large extent, the special impacts and some of the standard impacts were not amenable to quantification, hence a qualitative assessment was required.

PREMISES AND POSTULATES

PREMISES

The following information, as provided by other study team consultants, comprised underlying assumptions in the social impact assessment:

- construction activities will occur 8 hours a day, 5 days a week, with no overtime.
- construction will be completed within 18 months.
- landfill equipment will operate over an 8 hour day shift, 5 days a week. Landfill operations could be extended occasionally, but not after 19:00 hours.
- landfill equipment will meet MOE noise specifications.
- the shallow entombed landfill method is assumed.
- equipment associated with the operation of the incineration plant, and general equipment, will operate 24 hours a day, 7 days a week. The physical/chemical treatment plant will initially operate 8 hours a day, 5 days a week.
- mobile equipment (including trucks) will operate during the day shift, 5 days a week.
- the life of the facility will be at least 20 years.
- an undulating berm, of up to 5.0 metres in height, located at the 50 metre buffer zone has been included in the calculation of the noise levels.
- no clay stock-piling will occur on-site.
- lighting will be directed downward and inward and not towards residential properties.

Additional assumptions made by the relevant study team consultants apply to the social impact assessment also.

POSTULATES

The following assumptions were made by the social consultant to undertake the social impact assessment:

- the lighting used during the construction phase will be similar to that used in the operational phase.
- lighting will be limited to that required for security purposes.
- the handling of materials on-site will occur at any time and hence spills could occur at any time.
- no significant deviations are anticipated from the development and character of the local community as envisaged by the West Lincoln Official Plan, at the time of decommissioning.
- decommissioning activities will occur over a brief period of time.
- land use on-site following closure is assumed to be compatible with surrounding land uses and the character of the area.

STATUS OF DATA

Data used during Phase 4B were gathered through:

- field investigations of the study areas.
- contacts with representatives of community and recreation features in the study areas.
- site visits to communities with waste management facilities.
- a literature review of the potential impacts, and of monitoring programs, mitigation and compensation measures employed elsewhere.
- interviews with residents on-site, and in the local community.
- a survey of residents adjacent to the access route.
- secondary source material.

Community input was provided through:

- interviews with residents on-site, and in the local community.
- a survey of residents adjacent to the access route.
- interviews with community leaders.
- small group or "kitchen table" meetings with residents.
- informal, one-on-one interviews with residents who had not participated in the resident interviews.

Generally, the most recent census data available is from 1981. It is unlikely that a substantial change occurred between 1981 and 1986 and hence the validity of the 1981 Census data should not be limited.

Not all residents within the study area and along the access route chose to participate in the surveys, necessitating estimates of primary data in some instances. In cases where estimates were inappropriate the data were based solely on survey responses, excluding non-responding households.

The prediction of social impacts was limited to some degree by the lack of directly comparable case studies of similar facilities.

As is the case with all data, the information is a reflection of conditions existing at the time the study was undertaken and as such cannot account for any subsequent changes.

Despite the above-noted limitations, the data were adequate for their application in the social analysis.

MAIN FINDINGS

The social impact assessment produced the following findings:

Displacement

- Three households (5 residents) will be displaced from the site. Two of these households operate farms, although one is semi-retired. No children reside on-site.
- It is likely that these households will encounter difficulties in relocation, with varying degrees of impact. Displacement cannot be mitigated, but appropriate impact management measures can alleviate the impacts.
- Relative to most major development proposals, the displacement of residents is minimal.

Disruption of Day-to-Day Activities and/or the Use and Enjoyment of Property

- Construction noise:
    - 26 households (97 residents) could experience disruption to their daily activities and/or use and enjoyment of property due to construction noise. The disruption will be short-term, relative to the disruption associated with the facility operation, lasting approximately 18 months. The noise will be a daily occurrence, 5 days a week.
- Plant Noise:
    - only one residence (4 residents) could experience disruption due to plant noise. The change in sound levels represents a low degree of impact. Some disruption could occur during the nightime for the duration of the life of the facility.
- Landfill Noise:
    - the landfill operations represent the most significant contribution to change in the daytime sound environment.
    - a total of 30 households (116 residents) will experience disruption due to landfill noise above the ambient sound environment in their outdoor living areas. A total of 7 households (24 residents) will experience disruption due to sound levels above the MOE criteria at the outdoor living area.

  - a total of 13 households (55 residents) will experience noise levels above ambient at the exposed building face; 7 households (27 residents) will experience noise levels above criteria.
  - the most significantly affected households would be those experiencing sound levels above the MOE criteria, and for longer periods of time.
  - the type of noise relative to the existing type of noise and resident perceptions of the facility could increase the significance of the disruption.
  - even after mitigation, residual noise will occur.
  - mitigation measures can be implemented but the feasibility and effectiveness can only be determined on a case-by-case basis.
  - with effective mitigation in all instances, landfill noise impacts over MOE criteria, at the exposed building face, would be eliminated. Outdoor activities of some households could be disrupted; 15 households would experience disruption to their outdoor activities due to sound levels above the ambient sound environment.

- Visual Intrusion
  - two-hundred and twenty (220) residents (58 households) will experience high or moderate visual impacts. With effective mitigation measures, the number of households experiencing high or moderate visual impacts could be reduced to 35.
  - visual intrusion will occur over the life of the facility, at least 20 years.
  - the change in the visual character of the site represents an intrusion on the character of the area, through change in the attributes valued by the area residents.

- Lighting
  - eighty-three (83) households (314 residents) are located within the lighting impact zones.
  - no direct disruption due to lighting effects are anticipated; the disruption will be related to a noticeable glow in the sky. The glow will result in a change in the rural character of the area and will provide a reminder of the existence of the OWMC facility in the area.

- Dust
  - fifteen (15) households (54 residents) will experience increased levels of dust, in worst case situations.
  - generally, the disruption due to dust will be limited to the immediate vicinity of the site and will occur infrequently.
  - the disruption will be in the nature of occasional inconvenience to residents and will not likely seriously affect daily activities or use and enjoyment of property.
- Odours
  - odours will largely be confined to the site but could occasionally be detected beyond the site boundaries.
  - if sufficiently strong and unpleasant, odours could disrupt residents' activities or diminish their enjoyment of their property.
- Cumulative Impacts
  - sixty-six (66) households would experience disruption because of two or more nuisances associated with the facility. Twelve (12) households (48 residents) are expected to experience unacceptable levels of cumulative impacts even after all reasonable mitigation measures have been implemented.
- Access Road Impacts
  - most of the standard impacts that might be associated with the access route will be insignificant. However, residents are concerned regarding the potential of the OWMC traffic to affect their health and safety and disrupt their daily activities.

Disruption of Operations (Community and Recreation Features)

- Noise, Dust, Odour
  - no community and recreation features are anticipated to experience disruption due to noise, dust or odour from the OWMC facility operations.

- Visual Intrusion
    - Bethel Community Church and a proposed campground/trailer park are located within the moderate visual impact zone.
    - disruption due to visual intrusion is anticipated to be minimal for Bethel Community Church as most activities occur indoors.
    - disruption could be more significant for the proposed campground/trailer park; however, it is uncertain whether the proposed park will be developed.

- Lighting
    - four community and recreation features would be affected by night lighting.
    - disruption to Bethel Community Church would be negligible as activities generally occur indoors.
    - disruption to the Silverdale Gun Club and Niagara Regional Sportmen's Club are anticipated to be minimal. Limited overnight camping occurs in association with some events, but the added glow is not expected to deter this activity.
    - if developed, the proposed campground/trailer park could experience some disruption as the glow could detract from camping activities.

Stress

- OWMC's proposal has created a significant degree of stress within the community. The stress is attributed to the community's perception of a lack of control over decisions affecting their future, a lack of trust in OWMC and a negative perception of the proposed facility.

Satisfaction with the Community

- locating the facility at the preferred site will affect the current level of satisfaction with the community as a place to live, by producing real or perceived changes in some of the attributes which combine to make West Lincoln an attractive community (e.g., peace and quiet, clean air, absence of industrial development, social ties).
- impact management measures can be implemented to minimize the degree of resident dissatisfaction.

Community Cohesion and Stability

- the potential out-migration, and any subsequent in-migration, of residents is difficult to predict. It is anticipated that out-migration will be minimal. Residents nearest the site will have the opportunity to move because of OWMC's buy-out and guaranteed purchase policies; others may leave if their fear for their health and safety is great enough.
- it is desirable to minimize out-migration. Therefore, it is important to apply impact management measures which deal with the real and perceived impacts of the proposed OWMC facility.

Community Character

- development of the OWMC facility will result in an obvious change to the area and is a contradiction of the existing community character and image.

Decommissioning and Post-Closure

- decommissioning and some post-closure activities (e.g., any remedial actions taken) could result in disruption of day-to-day activities and/or the use and enjoyment of property and disruption of operations of community and recreation activities. Disruption would be similar to that associated with construction activities. The duration of the impacts would be relatively short-term.
- as plant and site operations cease, some impacts on residents' daily activities and enjoyment of property and the operations of some community and recreation features would be eliminated or reduced.
- some employees of the OWMC facility living in the local community may have to leave the area to obtain new employment. Out-migration of these residents could have implications for their households and for the community, affecting community stability, character and/or cohesion. In-migrating households replacing any who leave could have similar social implications. However, not all OWMC employees are expected to live in West Lincoln, particularly not in the local community, and it is unlikely that out-migration or in-migration would occur at a level with significant implications.
- impact management measures are recommended which would minimize the potential impacts that could be associated with decommissioning and post-closure and ensure that the end use of the site is compatible with the goals of the community.

CONCLUSIONS

Three (3) households would be displaced from the preferred site. The residents of these households could encounter difficulties in relocating; impact management measures are recommended to minimize potential hardships.

Development of the proposed OWMC facility will disrupt the day-to-day activities and use and enjoyment of property of over 60 households as a result of noise, dust, odour, lighting and visual impacts created by the construction and operation of the facility. The nuisance potentially causing the greatest disruption is noise. Generally, those nearest the site will be affected more significantly. Minor nuisance effects could be experienced by households located beyond the direct impact zone.

The standard social impacts anticipated at the preferred site would not be substantially different, and could be less significant, than those experienced with other large facilities.

The proposed OWMC facility would result in a substantial change in the character of the area in the vicinity of the site -- from essentially rural-agricultural to having a major industrial development in its midst. Therefore, there is a potential for the proposed facility to alter the level of satisfaction residents feel toward the community. Residents could respond by moving; others would stay if, in some way, they feel they have been sufficiently compensated for the effects. The response of residents to the nuisance impacts of the proposed OWMC facility and those they perceive (e.g., risk) could lead to a range of special impacts. The proposed facility differs from other large developments; residents will be influenced by their fears, concerns and perceptions of the facility's impacts on human health, safety and the community in general.

It is important that a broad range of impact management measures be considered to minimize the impacts which would occur if households make decisions based upon their perceptions and concerns. Some residents will move; those nearest the site will be able to leave because of OWMC's buy-out and guaranteed purchase policies. Others could leave if their fear for their health and safety and distrust in OWMC and government are great enough.

Furthermore, if residents see OWMC as not effectively dealing with their perceptions and concerns or if problems occur during the initial years of operation, other residents could leave. The out-migration of residents and the implications to the community cannot be predicted, nor can the effects of in-migration of residents to take the place of those who leave. However, out-migration and in-migration can be monitored.

From a social perspective, it is desirable to minimize out-migration; it is therefore important to implement impact management measures to deal with both the nuisance impacts of the facility and residents perceptions and concerns. The implementation of a comprehensive impact management strategy to deal with special impacts, coupled with a range of mitigation actions to minimize nuisance impacts, will keep out-migration to a minimum. Community involvement with OWMC in the development of impact management measures will also contribute substantially to addressing some of the perceptions and concerns that underly the special impacts. If steps are taken by OWMC to ensure that the impacts on the residents and community are recognized and dealt with appropriately, the proposed facility would be acceptable from a social impact perspective.

CHAPTER 1

INTRODUCTION

In September 1985, the Ontario Waste Management Corporation (OWMC) announced that the preferred site for its hazardous waste management facility was in the Township of West Lincoln, at the location referred to as LF9C during previous stages of the site selection process. This report documents the social impact assessment undertaken as part of Phase 4B of the OWMC's Facilities Development Process.

The approach taken for the Phase 4B Social Impact Assessment (SIA) is a logical extension of earlier phases of the OWMC study. Figure 1.1 shows the various phases and their relationship to one another. In the previous phase, Phase 4A, a preferred site was chosen from eight candidate sites. The technologies to be used at the facility and its conceptual design were also refined. The specific objectives of Phase 4B are to:

- verify the findings of Phase 4A for site selection and facility design.
- define the existing environmental conditions (baseline) of the preferred siting option.
- predict and assess potential risks and impacts that may be associated with the proposed facility design, operations and decommissioning.
- identify and develop appropriate mitigative measures to minimize the potential risks and impacts associated with the proposed facility design and operations.

- identify and develop monitoring programs that will be implemented to assess the effectiveness of the design and operations in minimizing risks and impacts.

- identify residual impacts (impacts remaining after the implementation of mitigative measures).

- prepare documentation to meet the requirements of Ontario's Environmental Assessment Act.

The various consultants and their areas of responsibility for Phase 4B studies are listed in Table 1.1

The purpose of this report is:

- to predict the future social development of the candidate community both with and without OWMC;

- to investigate the impact management strategies for possible social impacts, and to recommend measures for inclusion in OWMC's impact management program;

- to evaluate the overall social acceptability of the preferred site.

While the Phase 4B SIA was a further development of the site selection studies in earlier phases, it differed in the following ways:

- the concern was with the overall acceptability of the preferred site rather than the relative acceptability of several sites;

- it was possible to predict in more detail the future social development of the candidate community both with and without the OWMC facility;

- OWMC's policies were evolving and considerably more detail was available concerning the design and operation of the facility. Therefore, a much more detailed prediction of impacts was possible.

- much greater attention had to be paid to mitigating and compensating for impacts; and

- it was necessary to develop a program for monitoring social impacts in the long term.

FIGURE 1.1. FACILITIES DEVELOPMENT PROCESS

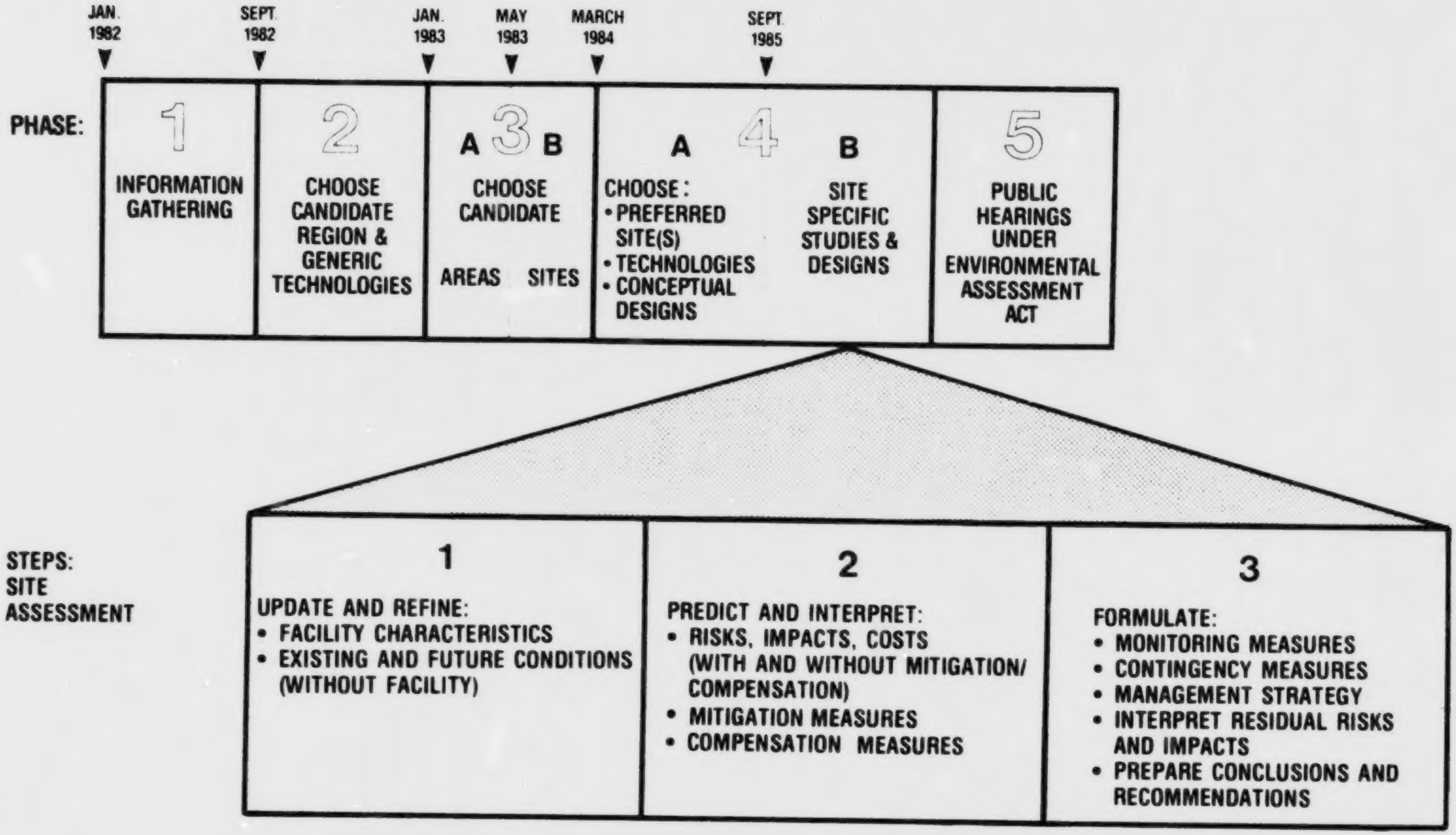

TABLE 1.1
PHASE 4B, SITE ASSESSMENT: CONSULTANTS AND AREAS OF RESPONSIBILITY

Firm	Major Area of Responsibility
Ecologistics Ltd.	- agricultural impacts
EDA Collaborative Inc.	- visual assessment
Environ Corp.	- risk assessment
Gartner Lee Associates Ltd.	- geology, hydrogeology and geotechnical considerations - biology
Institute of Environmental Research Inc.	- social and community impacts - heritage resources (Historica Research Limited)
L. Kentridge Associates	- land use
M.M. Dillon Limited	- site assessment synthesis - transportation analysis - transportation risk - noise analysis (S.S. Wilson and Associates) - surface water analysis - surface water risk
Monenco Ltd.	- engineering and cost analysis - facility design - landfill design (M.M. Dillon Ltd.)
Morehouse Economic Planning Consultants	- economic base - municipal services and finance (Future Urban Research)
Museum of Indian Archaeology	- archaeological resources
Ontario Research Foundation	- air dispersion/air quality
Ontario Hydro	- electric power supply study

Source: Ontario Waste Management Corporation, June 1987.

The impact factors used in Phase 4A were refined and new factors were developed, as required, for the Phase 4B analysis. Three major categories of impacts were considered in Phase 4B:

- revisions to the direct impacts initially assessed in Phase 4A. Revisions to these estimates of impacts were made on the basis of new and more detailed information concerning the facility's operation.
- expanded consideration of a number of impacts that were dealt with in a preliminary fashion in Phase 4A. The factors used in Phase 4A were appropriate for a comparative assessment of the eight candidate sites but did not necessarily deal with the full array of impacts in sufficient detail to describe the social impact of the facility.
- consideration of potential impacts screened from the Phase 4A analysis. A number of potential impacts, including all of those perceived by community residents, were not considered in Phase 4A because they were common to all sites and therefore not useful in comparing and selecting the preferred site.

The following areas of social analysis are relevant to the assessment.[1]

- displacement of residents from the site.
- disruption or interference with the day-to-day activities and/or the use and enjoyment of property of the residents around the preferred site and along the access route.
- disruption or interference with operation of community and recreation features around the preferred site and the access route.
- changes to the social characteristics of the community around the preferred site.

The Phase 4B Social Impact Assessment Report has fourteen chapters organized into two parts. Part One provides a general introduction to social impact assessment and its relevance to the OWMC project. Part Two describes the social impact of the OWMC facility in West Lincoln. Chapter 1, 'Introduction', describes the purpose of the report, its relationship to earlier study phases, and the organization of the report. Chapter 2, which deals with social impact assessment for hazardous waste management facilities, is divided in two sections. The first provides an overview of SIA, its definition, scope and methods. The second section discusses SIA for hazardous waste management facilities more specifically. Previous experiences, and the similarities and differences between the SIAs for other types of major development projects and those for hazardous waste management facilities are reviewed. SIA is also compared to risk assessment.

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[1] As there are no community and recreation features on the preferred site, the Phase 4A factor 'displacement of community and recreation features from the site' was omitted from the Phase 4B analysis.

Chapter 3, 'General Approach for Assessing the Social Impact of the OWMC Facility', describes the difference between 'standard' and 'special' impacts and outlines the scope of the SIA. The role of monitoring, compensation, community relations policies, etc., in addressing social impacts is examined. Chapter 4, 'Study Methods', reviews the data collection and community input processes. The limitations and constraints of the study methods are also discussed.

Part Two of the report describes the social impact of the OWMC facility. Chapter 5 defines the various study areas and impact zones employed in the social assessment. Chapter 6, 'Existing Conditions', discusses socio-demographic characteristics, community services and facilities, social and community structure, and lifestyle in the local area. Chapter 7, 'Baseline Future Scenario' describes the expected future scenario for the area. Chapter 8 describes possible social impacts associated with the OWMC facility and is divided into two sections. The first deals with the identification of possible impacts, and includes a general discussion of issues and concerns based on community input, site visits to other facilities, the literature, and other sources of information. The second section defines and discusses impact categories and possible factors, with a distinction being made between standard and special impacts.

Standard impacts are discussed in Chapter 9. The relevant factors in the SIA, assumptions, and information provided by other consultants are identified. For each potential impact, prediction methods and their limitations are discussed, as are the levels of impact, their possible timing, and the confidence in the predictions. The factors that may influence impacts, opportunities to mitigate, impact with mitigation (net impact), and assessment of the significance of the impact are also discussed.

Chapter 10, 'Special Impacts', discusses relevant factors, reviews the assumptions made with regard to OWMC policy on impact management measures, and identifies the methods used to identify potential impacts. A discussion of special impacts follows. The potential for special impacts in West Lincoln and evidence from other comparable cases is reviewed.

Chapter 11 provides a review of public perceptions and concerns with regard to the proposed OWMC facility, and Chapter 12, a discussion of impact management measures to address residual standard impacts and special impacts. The decommissioning and post-closure of the facility are discussed in Chapter 13. The report's conclusions are outlined in Chapter 14. This chapter is followed by the bibliography and a number of appendices. These include the research instruments and community and agency contacts.

PART 1

SCOPE AND PURPOSE OF THE SOCIAL IMPACT ASSESSMENT

CHAPTER 2

SOCIAL IMPACT ASSESSMENT FOR HAZARDOUS WASTE MANAGEMENT FACILITIES

2.1 SOCIAL IMPACT ASSESSMENT: OVERVIEW

Social impacts are alterations that occur in people's living conditions as a result of the development and implementation of a new policy, program or project, and that are experienced by these people as significant events. OWMC is proposing to build a hazardous waste treatment and disposal facility in the Township of West Lincoln. The nature and size of this project will result in changes in the social environment.

The objective of social impact assessment (SIA) is to describe the social changes that are the direct or indirect effects of a proposed policy, program or project. Essentially, the process involves describing the conditions that exist in the social environment prior to project implementation, and forecasting the changes that can be expected as a result of the project. Social systems are constantly evolving. The task in SIA is to identify possible impacts that might result from a proposed project and to assess the significance of these changes - the advantages and disadvantages to the people involved. In this way, the social implications of the proposed project can be taken into consideration in determining public policy or designing impact management strategies.

SIA is basically a two-part analysis. In the first stage, the existing social environment is described; known and anticipated effects of a proposed development are then identified. During the second stage, these effects are evaluated. Their implications for individuals in both the local and larger community, as well as for community and recreation features and the social environment of the community as a whole, are assessed.

2.2 SOCIAL IMPACT ASSESSMENT FOR HAZARDOUS WASTE MANAGEMENT FACILITIES

A SIA for a hazardous waste management facility has both similarities to, and differences from, those for other major development projects. These types of projects are similar in that they often result in 'standard' impacts. Standard impacts are the direct and indirect results of changes in the environment brought about by the construction and operation of a facility. These include such impacts as displacement of residents, nuisances such as noise, dust and odour, construction impacts, and potential changes in demand for community services and facilities.

A SIA for a hazardous waste management facility differs from those for other major development projects in several important ways. The types of projects most often studied include electrical generating plants (nuclear, hydroelectric), mines, and petroleum extraction facilities. These projects are often located in relatively isolated communities, and the SIAs concentrate on the influx of workers and the spin-off effects they create in these communities (i.e. effects on housing supply, services, crime rates, etc). In comparison, the workforce associated with construction of the proposed OWMC facility is expected to commute from outlying areas and will be relatively small (an average of 360 for the 18 month construction period, and 600 during the peak period from month 10 to 16). The estimated workforce when the facility is operating is 151 workers (Morehouse Economic Planning Consultants 1987). Thus there will not be a large influx of people or a strain on housing or community services attributable to workers at the OWMC facility.

The usual benefits to the local community often associated with major development projects (i.e., boost to the local economy, induced development, etc.) are not necessarily of the same magnitude in the case of waste management facilities. In the case of the OWMC facility, there will be local purchases, some local hiring and other related economic and/or financial benefits accruing to West Lincoln (Morehouse Economic Planning Consultants 1987).

The most significant difference between SIA's for other major development projects and an SIA for a hazardous waste management facility is the emphasis that must be placed on 'special impacts'. Special impacts result from perceptions of the facility and/or perceptions of the risk associated with a hazardous waste management facility. Local residents will be concerned about the potential for accidents and spills as well as the impact of the uneventful and routine operation of the facility. The lack of previous Canadian experience with a plant of the type OWMC is proposing will accentuate their concerns. Due to their fears and negative perceptions of a waste facility, some residents may choose to leave, resulting in a number of impacts on the residents themselves, community and recreation features, and the community as a whole. Thus, special impacts would include resident stress and out-migration resulting from anxiety concerning the possible effects of the facility.

Few SIA's completed to date have dealt with special impacts. However, the special impacts of a hazardous waste management facility are likely to be the most important social impacts and thus must be dealt with in the SIA for the proposed OWMC facility.

Little research has been undertaken of methods of predicting special impacts and few SIA's have attempted to do so. As a result, there are no well developed methods of predicting special impacts. Instead, predictions must be based on the existing conditions, the limited available research and case studies which frequently are not directly comparable. Ultimately, professional judgement must be used. Figure 2.1 indicates how standard and special impacts contribute to the social impact assessment of the OWMC facility.

2.3 SIA AND RISK ASSESSMENT

The difference between SIA and risk assessment should be emphasized. Risk assessment systematically identifies the probability of occurrence and degree of negative risks associated with a proposal as well as the probability of exposure and of effects.[1] Risk assessment is often focussed on health impacts. In relation to risk assessment, SIA is concerned with perceived risks (regardless of whether a 'real' or 'actual' risk might exist), and how they subsequently might result in special social impacts. While there is literature on resident's perception of undesirable facilities, there is very little documentation on how people do in fact respond to these perceptions.

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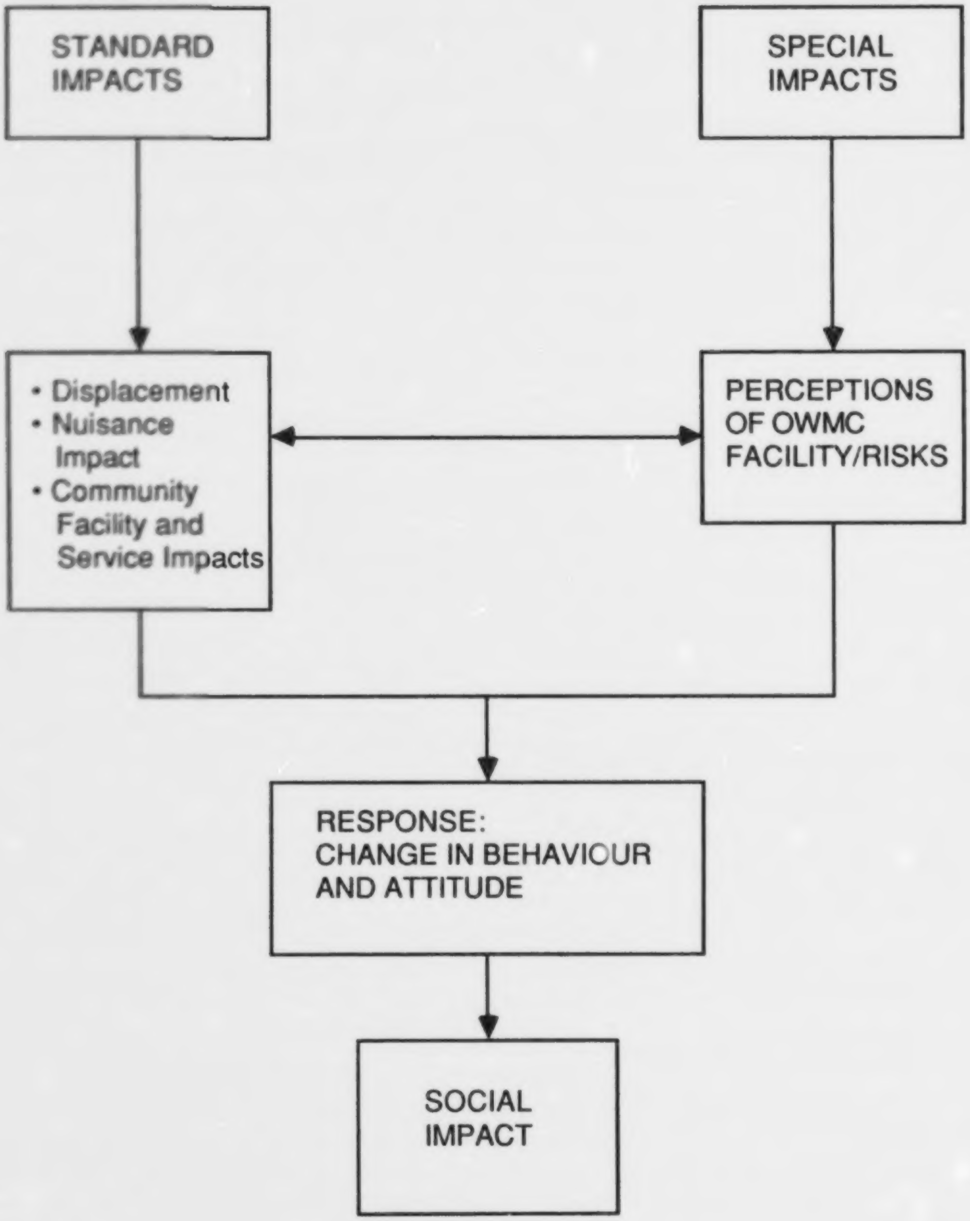
[1] For a discussion of the risk assessment undertaken in Phase 4B, refer to Environ Corp. 1988.

FIGURE 2.1

SOCIAL IMPACT ASSESSMENT


STANDARD IMPACTS
SPECIAL IMPACTS
• Displacement
• Nuisance Impact
• Community Facility and Service Impacts
PERCEPTIONS OF OWMC FACILITY/RISKS
RESPONSE: CHANGE IN BEHAVIOUR AND ATTITUDE
SOCIAL IMPACT

Source: Institute of Environmental Research Inc., 1988

CHAPTER 3

GENERAL APPROACH FOR ASSESSING THE SOCIAL IMPACT OF THE OWMC FACILITY

3.1 STANDARD AND SPECIAL IMPACTS

Standard impacts are the direct and indirect results of changes in the environment brought about by the construction and operation of the OWMC facility. Displacement of residents, nuisances such as odour, dust, noise, etc., construction impacts, potential changes in the demand for community services and facilities are examples of standard social impacts. Special impacts result from perceptions of the facility and/or perceptions of the risk associated with the facility. In the case of any unwanted facility, such as a waste facility, the actions and behaviour of individuals (such as voluntary moving) resulting from concerns and fears are the special impacts.

Standard and special impacts must be dealt with separately in the SIA for the following reasons:

- standard impacts can be predicted with some certainty based on information concerning the construction and operation of the facility; predicting special impacts with any degree of certainty is extremely difficult.

- the existing environment as it relates to standard impacts will be well documented and easy to verify. Units of measurement, study areas, procedures for compiling data, etc., will generally be well known and accepted for standard impacts. Special impacts are much more difficult to determine and, there are no methods that are widely accepted for documenting existing conditions for special impacts.

- accepted procedures are generally available for predicting standard impacts; this is not the case for special impacts.
- in most cases, there will be guidelines, standards, policy or relevant experience that can be used to assess the significance of standard impacts; this is not the case for special impacts.

While standard and special impacts are dealt with separately in this report, it is important to recognize the interrelationship between these categories of impacts. For example, perceptions of the OWMC facility may result in voluntary decisions to relocate, thereby contributing to social impacts. The extent of out-migration that can be attributed to perceptions of the facility, however, is difficult to predict and must be assessed separately from displacement caused by land acquisition for the facility.

3.2 SPECIAL IMPACTS

An assessment of special impacts demands an understanding of (1) the perception of the facility and/or the perception of the risk associated with the facility, and (2) the response to the perception.

3.2.1 PERCEPTION OF THE FACILITY/RISK

There is very little literature available on the perception of hazardous waste management facilities or the risk associated with these facilities. There is, however, a considerable body of literature on risk perception, some of which deals with facilities that may be considered comparable in some aspects. This literature provides some information about the factors affecting the perception of risk and the potential for altering perceptions of risk. The literature shows that actions taken by OWMC may alter the residents' perception of the risk associated with the facility and thereby alleviate potentially negative social and psychological impacts that are based on the perception of the facility.

3.2.2 THE RESPONSE TO PERCEPTIONS OF THE FACILITY/RISK

The potential impacts of concern are the result of the residents' response to their perception of the facility. The potential responses might be simply classified as three types:

- actions in response to perceptions of the facility (e.g., the resident decides to move; abandon farming; stop participating in local community associations, etc.)
- attitude or opinions formed in response to perceptions of the facility (e.g., less satisfaction with the community as a place to live; a different, less satisfying, image of the community)
- psychological impacts - changes in the individual's physical or mental health brought on by stress or anxiety related to perceptions of the facility.

This analysis deals specifically with resident attitudes and opinions and their own anticipated actions. The stress in the community resulting from the OWMC proposal is discussed in general terms but this study does not address psychological impacts. It is recognized that stress can culminate in medical implications for certain individuals. The social impact assessment has identified the presence of stress within the community, as reported by residents; however, it does not address the psychological (physical and mental) health implications. Such an assessment is beyond the mandate of the social consultant and requires a specific medical study undertaken by qualified medical experts.

The confidence that can be placed in IER's assessment of special impacts depends on the confidence with which one predicts the residents' responses to perceptions of the facility. Significant limitations are encountered in this area. While there is literature on residents' perception of undesirable facilities, there is very little documentation on how people actually respond to these perceptions. Consequently, the assessment of the special impacts is based on the following data:

- the residents' view of their response from the 4B survey (e.g., the number that report they will move if the facility is built);

- the limited information available from the literature of other controversial facilities (e.g., Three Mile Island);
- the data gathered from visits to other waste management facilities.

3.3 MONITORING AND CORPORATE RESPONSE STRATEGIES

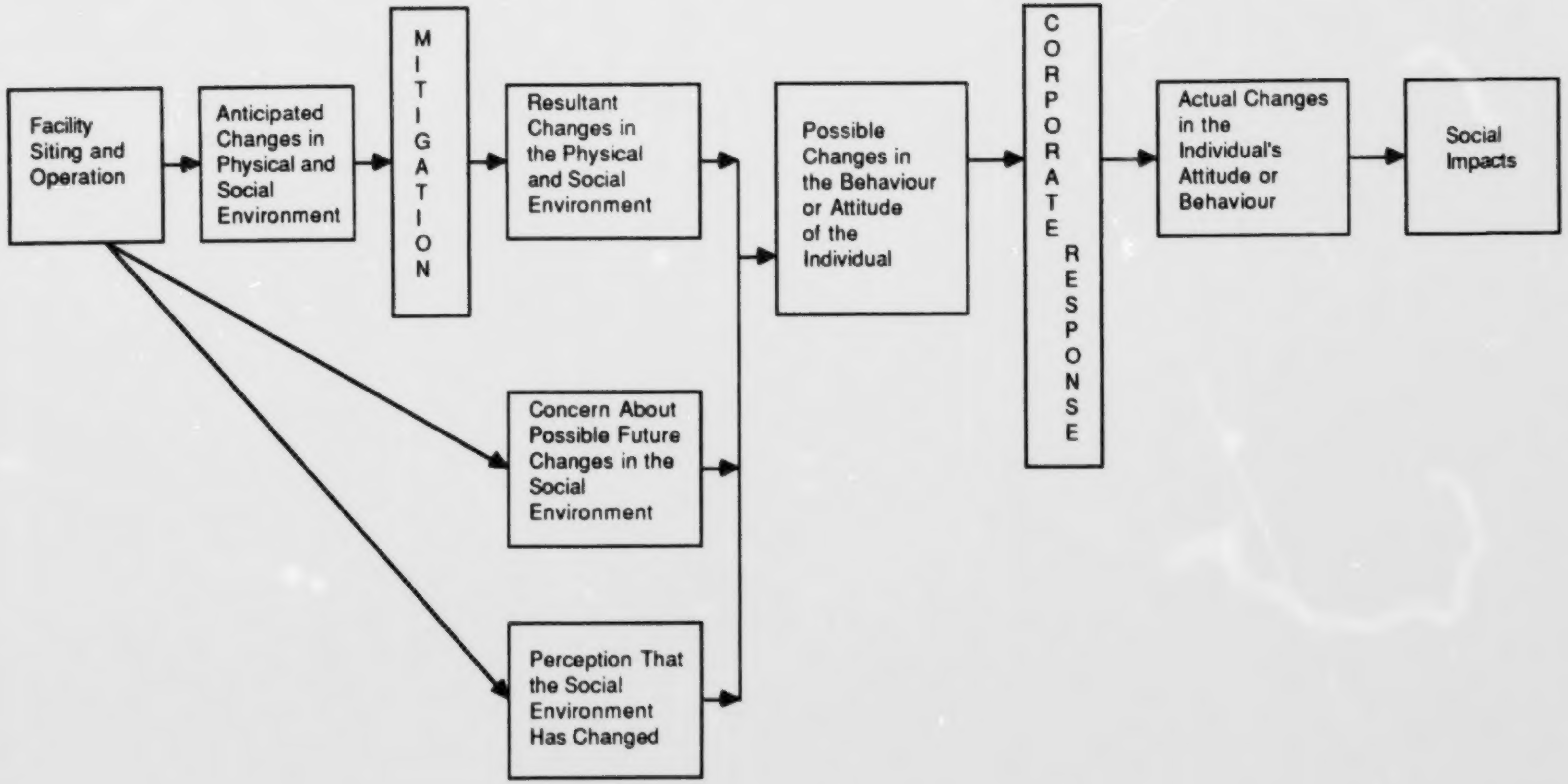
It is clear there will be limitations in the confidence that can be placed in the assessment of special impacts given the current understanding and research available. This highlights the importance of monitoring and other corporate response strategies.

As illustrated in Figure 3.1, corporate response strategies provide a safeguard against the unavoidable limitations in our assessment of special impacts. It is because there is a degree of uncertainty in predicting special impacts that they must be monitored. This monitoring provides that future potential impacts will be recognized and addressed in some manner.

It is expected that various corporate response strategies will influence the residents' perception of the facility in a positive manner and therefore, it can be assumed, avoid some of the potentially negative actions and attitudes that may result from a poor perception of the facility. These community relations strategies might include such things as ongoing community information programs, resident participation in monitoring, fair compensation practises, etc.

A full discussion of public perceptions and corporate response options is provided in Chapters 11 and 12.

FIGURE 3.1: CORPORATE RESPONSE AND SOCIAL IMPACTS


Facility Siting and Operation
Anticipated Changes in Physical and Social Environment
MITIGATION
Resultant Changes in the Physical and Social Environment
Concern About Possible Future Changes in the Social Environment
Perception That the Social Environment Has Changed
Possible Changes in the Behaviour or Attitude of the Individual
CORPORATE RESPONSE
Actual Changes in the Individual's Attitude or Behaviour
Social Impacts

CHAPTER 4
STUDY METHODS

4.1 INTRODUCTION

There are four basic sources of information used in social impact assessment: the literature, experts, project data, and direct experience (Finsterbusch 1980, 22). Basic research in social impact assessment, case studies of similar projects, and theories or empirical findings that are applicable to social impact assessment can be found in the literature. Both qualitative and quantitative descriptive information obtained from documents and published information can be considered as project data. Direct experience provides more specific project data on the affected parties, and traditional social science methods are often used in this regard. These would include field observations, interviews with community leaders, agency representatives and those groups potentially affected by the project, surveys of, and meetings with, individuals who provide information about themselves, their families and the community.

These four types of data play different, but related, roles in any social impact assessment. While the literature can provide a basic idea of what to expect in a study, in itself it is limited, since each study is unique. Experts can also provide initial postulates about possible impacts and refine data requirements. The collection of data, guided by the literature and experts, may confirm or refute the preliminary suppositions when case-specific factors are considered.

In order to assess the social impacts associated with the proposed hazardous waste management facility, many of the information sources just described were used. Data were collected from field investigations, agency contacts, site visits, and literature reviews as well as other secondary source materials. Community input was provided through resident interviews, a drop-off survey of access route residents, community leaders, kitchen table meetings, and one-on-one meetings. In addition, information from OWMC's communication program and media sources was reviewed.

The study methods served several purposes:

- confirmation of data collected in Phase 3B and Phase 4A;
- refinements of, and additional detail to, Phase 3B and Phase 4A data;
- identification and collection of new data in areas not investigated in previous study phases, but pertinent to the Phase 4B analysis;
- community input.

The study methods provided data with which to project and evaluate the social impacts. They also provided input into potential impact management strategies designed to address the social impacts. The study program provided opportunities for input from various segments of the community - residents, community leaders, municipal officials, and operators of community and recreation features. Information about the community and perceptions of the effects of the proposed facility was compiled.

The first portion of this chapter is divided into three (3) sections. Section 4.2 outlines the rationale and purpose of each data collection method. Section 4.3 documents the community input activities. Section 4.4 describes the limitations and constraints of the study methods. The remaining sections of this chapter document the general approach taken in the SIA (Section 4.5) and the time periods used in the assessment (Section 4.6). Section 4.7 identifies the relationship of the SIA to other Phase 4B studies.

4.2 DATA COLLECTION

The following sources provided data for the social impact assessment:

- field investigations of the study areas;
- contacts with representatives of community and recreation features in the study areas;
- site visits to communities with comparable facilities;
- a literature review of the potential impacts that could be associated with the proposed facility and of monitoring programs, mitigation and compensation measures employed elsewhere;
- secondary source material (i.e. census data, planning reports).

The purpose and rationale of each of these data sources are documented in the sections below along with the methods employed.

4.2.1 FIELD INVESTIGATIONS

Three field investigations were undertaken in the area surrounding the preferred site. The field investigations identified and/or confirmed:

- the location of community and recreation features within the local community;
- the location of residential dwellings within the local community;
- the local businesses within the former Township of Gainsborough.

Each of these field investigations is described below.

Location of Community and Recreation Features

A field investigation to identify the location of community and recreation features was conducted in January, 1986. The purpose was to confirm and verify the locations and continued operation of features identified during Phase 3B and Phase 4A and to locate community and recreation features within the wider local community study area employed in Phase 4B. Data on the community and recreation features were recorded on field observation forms; the data gathered included:

- the location of each feature. The location was mapped during the field investigation.
- a general description of each feature. The description included the level of use at the time of the field investigation and indicated whether or not the feature is used seasonally. In some instances signs provided information regarding programs and services offered and hours of use.
- distinguishing characteristics of the feature. These included ethnic or religious affiliation, properties for sale or buildings under construction or renovation.

The field investigation served to identify the community and recreation features for which detailed data would be obtained in order to assess potential impacts.

Location of Residential Dwellings

The number and location of residential dwellings within the local community were identified during a field investigation in January, 1987. The field investigation was conducted to verify and update the dwelling locations mapped within the Phase 4A 2 km study area and to identify the location of dwellings over the remaining portion of the local community study area.[1] The dwelling locations were recorded on a 1:10,000 scale property boundary map. Locations were cross-checked in the office using aerial photographs and input from Ecologistics Ltd.

The location and number of residential dwellings were used to identify households and residents within the various nuisance impact zones and in the local community.

Location of Businesses

Businesses located in the former Gainsborough Township section of West Lincoln were identified and recorded on a map during a field investigation in January, 1986. Owners/operators of some of these businesses were interviewed to document their business trade areas as part of the task of defining the local community boundary.

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[1] The local community study area is approximately a 5km zone around the proposed site. Refer to Chapter 5, Study Areas, for the discussion on the definition of the local community.

4.2.2 AGENCY CONTACTS

Representatives of community and recreation features within the local community[1] and within 500 metres along each side of the access route were contacted. The agency contacts served two purposes:

1. to gather detailed information about the community or recreation feature, its use and users; and
2. to identify any concerns the feature's owner/operator and users might have regarding the OWMC facility.

Appendix A lists the community and recreation features and the representatives contacted during the data collection phase.

Information had been obtained for many of the community and recreation features during Phase 3B and Phase 4A of the site selection process. The contacts in Phase 4B served to verify and update this information. Detailed data were obtained in Phase 4B for any features that were developed since the Phase 4A information was collected. The contacts described concerns regarding the OWMC facility and potential effects on their community and recreation feature. They also suggested mitigation and compensation measures.

The appropriate individual representing each community and recreation feature was contacted initially by telephone to explain the purpose and details of the study and to schedule a convenient time for an interview. In some instances interviews took place over the phone; however, most were personal interviews.

The data obtained during the interviews were reviewed and where necessary, follow-up phone calls were made for clarification or additional information. The data obtained for each community and recreation feature is documented in Appendix B.

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[1] Several community and recreation features located outside the local community boundary were contacted as well. These features were identified as playing a significant role within the local community and it was considered important to include them in the social assessment. 'Local community' is defined in Chapter 5, 'Study Areas'.

Prior to the finalization of the social assessment, a letter was sent to each representative outlining the data provided. The representatives were asked to identify any inaccuracies or changes, and invited to submit additional comments.

4.2.3. SITE VISITS

The social impacts of hazardous waste management facilities are not well documented. No detailed historical records or impact assessments were identified which record the changes that have occurred in the social environment following the siting and operation of such facilities. While some information is available on other types of developments, such as highways, sanitary landfills and generating stations, the nature of these developments differs sufficiently from the proposed facility to limit their usefulness.

In the absence of background information on previous experience, an alternate source of data was needed to provide information for the social assessment. To this end, site visits were undertaken at existing hazardous waste management facilities in Canada and the United States.[1]

Initially, existing waste management facilities in Canada and the United States were identified by OWMC and knowledgeable individuals familiar with waste management facilities. Those which had facilities comparable to those proposed by OWMC were pursued. Calls were made to representatives of these facilities, federal and state regulatory agencies, politicians, media representatives and community leaders in order to gather background information on each facility. The type of information sought included:

- a description of the facility;
- adjacent land uses;
- nearest residential unit(s);
- length of time the facility had been in operation;
- nearest town/city;
- nature of any complaints;

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[1] In Phase 3B site visits were made to facilities in Europe and the information gathered from those visits was used in the social impact assessment as appropriate.

- mechanisms to deal with complaints;
- population mobility;
- apparent anxiety or concern in the community due to the facility and the manner with which it was dealt;
- impacts on community and recreation features;
- names of additional key individuals to contact.

The persons contacted provided supporting material where appropriate.

The information obtained was reviewed to identify those facilities that warranted detailed investigation due to similarities in the type of facility and the social environment. The facilities selected were those most likely to provide information on the issues of concern. Two were selected in each of Canada and the United States. They were Stablex in Blainville, Quebec; Tricil in Sarnia, Ontario; and the Rollins facilities in Deer Park (Houston), Texas and Baton Rouge, Louisiana. The characteristics and impacts of these facilities are documented in Appendix C.

Informal, unstructured interviews were scheduled with key community contacts for each of the selected facilities. Interviews were held with the following types of individuals:

- facility operators or management
- provincial and state regulatory agency representatives
- mayors from the municipality hosting the facility
- clerks/city managers
- municipal planners
- attorneys representing groups that opposed the facility siting
- leaders and/or members of opposition citizen groups
- community leaders
- nearby residents
- representatives of nearby community and recreation facilities
- representatives of environmental groups
- newspaper reporters
- real estate representatives
- members of resident liaison committees operating in the vicinity of the facilities
- state legislature representatives

The key community contacts interviewed for each facility are listed in Appendix C.

Information obtained through discussion with these individuals included:

- the nature of complaints attributed to the facility (e.g., type and frequency of complaints);
- nuisance impacts associated with the facility (e.g., noise, odour, visual intrusion, traffic);
- compensation and mitigation measures taken to address impacts;
- monitoring programs;
- public involvement and role;
- property value impacts;
- mobility of population (in-migration of facility employees and out-migration of residents due to the facility);
- attraction of industry to the area;
- activities, organizations, and community and recreation features closed or established since facility development;
- resident and community response to the facility and effects on lifestyle;
- changes in the social structure and composition of the community.

In addition to the information from these site visits, the background data gathered on waste management facilities not visited were applied where appropriate. These additional facilities are identified in Appendix C .

The site visits were used to evaluate the projected impacts of the proposed OWMC facility and to establish a reasonable degree of confidence in the prediction of social impacts.

4.2.4 LITERATURE REVIEW

Relevant literature was reviewed during Phase 4B for the following reasons:

- to support the basic assumptions upon which the Phase 4A site comparisons and Phase 4B social impact assessment were based;

- to identify compensation and mitigation measures and programs to address social impacts; and

- to assist in developing a program of social monitoring.

The Phase 4A and Phase 4B social analyses were based on a number of assumptions. It was important therefore to document experience elsewhere that confirmed these assumptions. A literature review of reports and studies of experience elsewhere was one of the approaches used to compile information regarding the assumptions.

Because of the change in focus in Phase 4B (site assessment as opposed to the site comparison of Phase 4A) and the availability of more specific engineering details and other new information, it was necessary and appropriate to develop and refine the social factors. The review of relevant literature provided a means of identifying appropriate factors to describe and predict the social impacts.

Reports, documents and other literature were consulted to identify mitigation and compensation measures that had been employed elsewhere or could be applied to address social impacts. Monitoring programs at waste facilities and other major development projects as well as the literature on monitoring were analyzed. This material was used to develop a list of possible indicators of social change to be monitored and to define an appropriate management structure for monitoring, including the roles and responsibilities of the local municipality, community and OWMC.

4.2.5 SECONDARY SOURCE MATERIAL

In addition to the literature review, a number of other secondary source materials were consulted to assist in the social impact assessment. Census data provided existing characteristics and trend data with respect to population, population characteristics, households, housing, and labour force characteristics for the local community, the Township of West Lincoln, Vineland and the Region of Niagara. The Official Plans of the Township of West Lincoln, the Towns of Lincoln and Pelham, and the Niagara Region provided background on the municipalities and their goals and aspirations. Newsclippings and other media transcripts provided by OWMC were reviewed for insights into residents' concerns and information on issues related to the social assessment. A variety of other sources were reviewed; these are noted throughout the report.

4.3 COMMUNITY INPUT

A variety of methods were used to obtain input from the community into the social impact assessment. These are described below.

4.3.1 RESIDENT INTERVIEWS

The main purposes of the resident interviews were:

- to gather information concerning the characteristics of residents in the local community and their use of property for the purposes of predicting impacts;
- to compile baseline data that could be used for monitoring social changes;
- to collect specific information for other consultants (such as characteristics of farm households, which was used to describe the characteristics of the agricultural community);
- to provide residents with an opportunity to identify their concerns regarding the facility and ensure that their concerns were being addressed in the impact assessment.

The resident interviews provided a major source of data for the social evaluation of the preferred site. The following information was collected:

- household characteristics;
- property use;
- current lifestyle and behaviour patterns;
- satisfaction with the community and use of facilities;
- residents' concerns and perceptions of the effects resulting from the OWMC facility and how they would respond if the impacts occur; and
- residents' opinions regarding the relative merits of various mitigation and compensation measures.

The interviews were conducted in the area defined within the following boundaries:[1]

1. to the north, the West Lincoln Township boundary;
2. to the east, Regional Road 24;
3. to the south, the boundary between Wainfleet and West Lincoln Townships (coinciding with the Chippewa Creek, also known as the Welland River); and
4. to the west, Highway 20 and Regional Road 27.

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[1] For an explanation of the rationale for the local community study area, refer to Section 5.3.2

Portions of Bismarck and Wellandport located to the west of Highway 20 and Regional Road 27 were also included in the study area.

Design of the Interview Form

The resident survey was designed and undertaken in conjunction with Ecologistics Limited. Prior to finalizing the survey, a draft interview form was provided to the West Linclon Toxics Committee for review in May, 1986. In June, 1986, the interview form was pre-tested with four farmers and two non-farmers living outside the local community. All were familiar with the proposed OWMC facility at the time of the pre-test. Farm interview forms were pre-tested jointly by Ecologistics Ltd. and IER interviewers.

On the basis of these pre-tests, a revised interview form was presented to the West Lincoln Toxics Committee. The Committee's comments were reviewed with OWMC, Ecologistics Ltd. and IER consultants on June 18 and 20, 1986.

The interview form contained two main parts: the first part provided information for the social impact assessment and pertained to all residents; the second part related to farm operations only. In addition to the main interview form several addenda were administered as appropriate. Addendum 1 was administered to all farm and non-farm residents located along the section of the preferred access route within the local community. Questions were asked about current use of the road and concerns about the effects of increased truck traffic. Three additional addenda were administered to farm respondents, as appropriate.[1] A copy of the interview form is contained in Appendix D. A modified interview form was used for 'on-site' interviews to reflect the fact that these residents would be displaced from their property if the preferred site was approved.

Interviewing Process

Using Ontario Ministry of Revenue assessment roll information (December 1985), Ecologistics Ltd. compiled a list of names, telephone numbers, addresses, property assessment roll numbers, tenure information (i.e., owner/tenant), and property uses

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[1] Refer to Ecologistics Ltd. 1988, for a further discussion on these additional addenda.

(i.e., farm or non-farm) for resident and non-resident property owners and tenants within the study area. Once the list was completed OWMC mailed a letter to each resident owner and tenant advising them of the upcoming interview program and asking for their co-operation.[1]

Overall coordination of the interviewing process was the responsibility of OWMC, with the OWMC field office in Smithville serving as the centre of operations for the resident interviews. OWMC staff performed the interview scheduling, using the assessment roll lists as the source of names and telephone numbers. At least three attempts were made to reach residents for the purpose of scheduling an interview. If the resident could not be reached by telephone, a registered letter was sent advising that OWMC wished to schedule an interview and that this could be accomplished by calling the Smithville office.

If the resident was contacted by telephone and expressed a willingness to participate in the interview program, an appointment was made.[2] OWMC provided the schedule of interviews to staff from IER and Ecologistics Ltd., who then administered the interview at the pre-arranged time and location. IER staff were responsible for administering all non-farm interviews; Ecologistics Ltd. staff handled all farm interviews. The interviews were conducted during July and August of 1986.

If a resident was not at home at the time of the scheduled interview, OWMC was notified and an attempt was made to re-schedule the interview. In instances where the name, address or phone number of a resident of a property could not be determined, the Ministry of Revenue Assessment records were checked for changes or personal visits were made to the residence on the property and the occupant asked to participate in the survey.

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[1] Only owners or tenants actually residing or farming within the study area were interviewed. Non-resident landowners living outside the local community were notified by letter of the survey program and given the opportunity to comment on the OWMC proposal through a brief mail-back questionnaire.

[2] Only residents 18 years of age and older were interviewed.

Partway through the interviewing process, some residents expressed uncertainty regarding the purpose of the interviews, who was conducting the work and relayed rumours regarding the integrity of the interviewing process. A second letter was sent by IER and Ecologistics Ltd. to respond to these concerns and encourage the participation of residents who had not already done so.

All but 11 households were contacted to request their participation in the interviewing process.[1] A total of 79 farm and 174 non-farm interviews (253 interviews representing 256 households) were conducted, for an overall response rate of 39.9%.[2] Three hundred and twenty-three (323) households chose not to participate in an interview. Interviews were not scheduled with 40 households who fell into 'other' categories.[3] No interview could be scheduled for 17 other properties for a variety of reasons, among them that the dwelling was vacant.

Coding and Tabulation

Prior to the coding of the interview instruments, a comprehensive codebook was developed based on:

- a preliminary review of a large number of the questionnaires;
- past experience in developing questionnaire codebooks;
- anticipated response.

There were a large number of open-ended questions in the survey. A wide range of specific codes were developed for these open-ended questions and, as required, these codes were later collapsed into broader categories. The responses to open-ended questions were categorized to facilitate interpretation of the data.

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[1] Registered letters sent to these 11 residents were returned undelivered.

[2] Based on an estimated total of 642 households. Differences between values reported by Ecologistics Ltd. and IER with regard to the number of interviews relate to the following reasons:

i) Ecologistics Ltd. interviewed 14 additional farmers who lived outside the local community, but farmed within it. The results of the interview with these individuals were excluded from IER's data base as the concern in the social assessment was primarily with those who lived in the local community.

ii) There were some instances where more than one household was included in a single interview.

[3] These residents included those who indicated they would call back to schedule an interview but did not, and those who did not respond to the registered letter sent to them.

The farm section of the original interview instrument was coded by Ecologistics Ltd. The entire interview instrument was then forwarded to IER where the non-farm sections were coded. The completely coded original interview instruments were then returned to Ecologistics Ltd.; the raw data was then entered into the computer and outputs were produced providing frequencies and percentages for all questions in the survey. In addition, cross-tabulations were completed on specific questions as required by IER.[1]

Several checks and tests were conducted on the computerized data to ensure that the data base was accurate and the coding consistent. Visual scanning of the validation printout was completed to check for key punch errors and discrepancies. The identified errors were then cross-checked against the original questionnaire and the data base was corrected. The final results were then interpreted and analyzed.

4.3.2 ACCESS ROUTE DROP-OFF SURVEY

Data from the access route drop-off survey were used in combination with other information to evaluate the proposed site. The access route drop-off survey provided data on the characteristics of the respondents and households, present concerns with traffic and the access route, activities inhibited by present traffic, perceived effects from increased traffic, and comments regarding OWMC. A Business Survey and a Farm Survey were included with the questionnaire as addenda in order to obtain relevant information from those people who used their property for such purposes. A copy of the access route drop-off questionnaire is contained in Appendix D.

Delivery of the Access Route Drop-Off Survey

The delivery and collection of the drop-off surveys were coordinated out of the OWMC field office in Smithville, under IER's direction.

All residences on properties outside the local community with both access to, and a boundary abutting, Regional Road 24 received a self-administered questionnaire. During the week prior to the drop-off of the questionnaires, OWMC sent a letter to the residents along the access route asking for their co-operation in the survey. On August

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[1] Cross tabulations refer to comparisons in the responses to questions with respect to certain groups or individuals (e.g., if a respondent said they would move if the proposed facility is built, a cross-tabulation with other survey questions would allow identification of the age or length of residence of the respondent).

15 and 16, 1986, IER dropped off the questionnaires to all of the non-farm properties; Ecologistics Ltd. did the same for the farm properties. Completed surveys were picked up between August 18 and 22, 1986.

The drop-off package included a covering letter and an 'OWMC Phase 4B Drop-off Questionnaire.' If the resident was not home at the time of delivery the package was left in a safe place where it could be found by a household member (i.e. behind a screen door, in a mail slot). If the resident was home at the time of the drop-off, the package was delivered personally and a date and time was arranged for the completed questionnaire to be picked up. Otherwise, a representative of IER or Ecologistics Ltd. attempted to pick up the survey between August 18 and 22. If the resident was not home at the time of the attempted pick-up, one call-back was made. If this was unsuccessful, a prepaid return envelope and a letter requesting that the completed questionnaire be mailed to IER were left for the resident.

The access route drop-offs were marked on 1:10,000 scale photomosaic maps and documented on forms which included an identification number, assessment roll number and, where possible, the name and address of the questionnaire recipient. As well, comments were recorded regarding pick up arrangements, refusals, etc.

A total of 246 (205 non-farm, 41 farm) access route drop-off questionnaires were dropped off and 146 (128 non-farm, 18 farm) questionnaires were returned, for a response rate of 59.3%.

Coding and Tabulation

Following the drop-off/pick-up procedures outlined above, a codebook was developed for the access route questionnaire. The surveys were then coded; a copy was made for IER records, and the original coded survey instruments were sent to Ecologistics Ltd. As with the resident interviews, Ecologistics entered the data into the computer and produced frequencies and percentages for each question. Specific cross-tabulations were also programmed. The data output were finalized and analyzed following the review and correction of the raw data printout.

4.3.3 COMMUNITY LEADERS

Interviews were conducted with a number of key individuals to obtain information on issues relevant to the social impact assessment. They included community leaders and other individuals who could speak on behalf of the community as a whole or for a group within the community.

A referral approach was used to identify these people. Initially, municipal officials were interviewed, including mayors, clerks, planners, and municipal councillors from West Lincoln Township and the Towns of Lincoln and Pelham. These individuals were asked to identify others who could assist in generating comprehensive data for the social assessment. Additional community leaders included local clergy, school principals and residents.

The initial community leader interviews provided information for the development of the resident surveys and impact factors, and assisted in the definition of the local community boundaries. Others provided information on community character and stability, community goals and aspirations, and gave input that was used in the development of a future scenario for the community in the absence of OWMC. Interviews with community leaders also provided information on the community's response to the site announcement. This data assisted in documenting any changes that had occurred in the community since the site announcement and any change in opinions and attitudes regarding the OWMC facility.

Appendix A identifies the community leaders interviewed.

4.3.4 KITCHEN TABLE MEETINGS

A number of small group meetings or "kitchen table" meetings were held with residents in Pelham, Vineland, and Lincoln. The kitchen table meetings were open, informal discussions whose general purpose was to provide residents with the opportunity to convey their concerns about the proposed facility and to provide information in the areas of concern being addressed in the social assessment. The meetings also provided an opportunity to respond to some of the residents' questions concerning the facility. Residents in Pelham were not included in any of the resident surveys (with the exception of Pelham residents living along Regional Road 24 who were included in the access road survey); the kitchen table meetings provided them with a forum for conveying their concerns. The Vineland kitchen table meetings gave residents of the area a means to express their concerns, primarily with respect to transportation issues.

Initially, a representative from the OWMC Regional Office identified residents in these communities who might be willing to host a kitchen table meeting in their home. Those residents who agreed assisted the OWMC representative in identifying other individuals who might attend the meeting. An attempt was made to set up meetings for farm and non-farm residents. The kitchen table meetings were attended by small groups of residents (usually 6-12 individuals), as well as one or two representatives from IER and OWMC. A total of four kitchen table meetings were held, one in Vineland, one in Lincoln and two in Pelham. A list of the kitchen table meetings is provided in Appendix A.

4.3.5 ONE-ON-ONE INTERVIEWS

Participation in the resident interviews was lower than anticipated, with an overall response rate of 40%. As a means to supplement the data obtained through the resident survey, one-on-one interviews were held with residents who had not participated in the resident interviews. These were held with residents in the north portion of the local community where the survey response rate was the lowest.

A representative from the OWMC Regional Office contacted residents who had not participated in a resident interview to obtain their consent to participate in a one-on-one interview. For those who agreed, an interview time was scheduled. The interview took place in the resident's home and was attended by representatives from IER and OWMC's Regional Office. Only seven one-on-one interviews were held, due to the considerable difficulty encountered in obtaining the consent of individuals to participate. Those that were completed, however, did confirm the concerns documented in the survey.

The structure of the interviews was informal, with the discussion revolving around the residents' concerns about the impacts of the facility and other relevant issues relating to the social impact assessment. The interviews also provided an opportunity for some of the residents' questions to be answered. The information provided during these interviews was documented for use in the social impact assessment.

4.3.6 OWMC PUBLIC CONSULTATION PROGRAM

In conjunction with the Phase 4B impact assessment activities, OWMC conducted public consultation activities. These activities included regional meetings, kitchen table meetings, drop-in centres, public workshops and other small group meetings. Records of these activities were reviewed to identify data that were relevant to the social impact assessment; these data were used to supplement and reinforce the data from the social consultants' community input.

4.4 LIMITATIONS AND CONSTRAINTS OF THE STUDY METHODS

There are several limitations on the data gathered in Phase 4B. These include the following:

- a number of the residents within the study area (223) and along the access route (97) chose not to participate in the surveys. In some instances, missing information required the substitution of estimates for primary data. For example, the exact number of residents in the local community was not available because a number of households did not complete an interview. It was necessary to estimate population using the number of residents reported by responding households and average household size. In cases where estimates were inappropriate the data were based solely on survey responses and did not include non-responding households.

- it was not possible to make contact with any representatives of the Hideaway Trailer Park. Because this recreation feature is located in the southeast corner of West Lincoln Township, it is unlikely that it will experience any direct impacts. Indirect impacts are anticipated to be limited, if any.

- the information from the resident surveys, agency contacts, and other components of the study reflect conditions existing at the time the information was collected, and as such cannot account for any subsequent changes.

- generally, the most recent census data available is from 1981, although some limited data from the 1986 Census has been obtained.[1] The census data was used primarily to describe the past trends and existing conditions with respect to the socio-economic structure and character of the local community, nearby municipalities and region. It is unlikely that there would have been a substantial change between 1981 and 1986 and hence the validity of the 1981 Census data should not be limited.

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[1] Generally, however, the required data from the 1986 Census were unavailable. Once the data becomes available, the results will be updated, and provided as an addendum to this report.

- the prediction of social impacts was limited to some degree by the lack of directly comparable case studies of similar facilities.

Despite the limitations noted above, the data were sufficient for use in the social analysis.

4.5 STUDY APPROACH

The following steps were taken in the assessment of the social impacts:

- data collection and analysis;
- documentation of existing conditions;
- projection of future conditions (without the proposed OWMC facility);
- prediction of social impacts;
- evaluation of social impacts;
- recommendation of impact management measures;
- evaluation of residual impacts and overall acceptability of the proposed facility.

Data collection is documented in the previous sections of this Chapter. Data analysis involved:

- computer tabulations of frequency counts and percentage frequencies of the responses to the resident interviews and access route drop-off survey. Cross-tabulations of some responses were compiled;

- estimating the population within the local community and impact zones[1] and along the access road (using the survey data and, for those households not surveyed, average household size from the census data);

- mapping dwellings and community and recreation features; and

- documenting the information on community and recreation features, their use, users and concerns regarding the proposed facility.

Prior to predicting the social impacts of the proposed facility, it was necessary to identify the existing social conditions. Using the data collected and inputs from the community, the social character of the residents, community, region and the area along the access route was documented. Considerations included demographic and economic characteristics, land use, social structure and lifestyle and resident satisfaction with the community. The existing conditions are documented in Chapter 6.

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[1] The local community and impact zones are defined in Chapter 5.

The next step involved the projection of the future social conditions which would prevail in absence of the proposed OWMC facility. The baseline future scenario is presented in Chapter 7.

The assessment of the social impacts is based on the consideration of the existing conditions and anticipated future conditions without the OWMC facility, as compared to the predicted changes (i.e., impacts) associated with the facility. The approach taken to predict the social impacts varied depending on the type of impact. The analysis of the standard impacts generally involved combining information on predicted changes in the local environment (as provided by other consultants) with information describing the residents and community and recreation features exposed to the change. For example, the assessment of the disruption residents would experience due to nuisance effects from facility operations entailed mapping impact zones and the locations of residences within these zones. Information regarding the residents' characteristics, use of their property and concerns and perceptions of the implications of the nuisance effects were used in the evaluation. The approach taken for each standard impact is documented in greater detail in Chapter 9, 'Standard Impacts'.

The predictions of special impacts are based on individuals' responses to a change in the environment (real or perceived) and the implications of their responses for them and the community. Such responses cannot be forecast with certainty. Survey data and community input, literature, experiences at existing facilities, and professional judgement were used in predicting these impacts. Scenarios were developed in some instances to explore the implications of a range of possible responses. The approach taken for each special impact is described in detail in Chapter 10, 'Special Impacts'.

The prediction of impacts assumed no mitigation measures beyond those OWMC must do or is committed to undertake. Residual impacts are evaluated after considering additional impact management measures.

4.6 TIME PERIODS

Several time periods, representing the various stages of the project, were used in the social impact assessment. These time periods and their relevance to the SIA are noted below:

- Pre-Construction: The time period leading from the announcement of the preferred site to the approval of the site was used to document existing social conditions and establish baseline data. Impacts, such as stress related to the site announcement were also considered.
- Construction: This 18 month period was used to assess the social impacts related to the construction activities, (e.g., disruption of day-to-day activities and/or the use and enjoyment of property, and displacement of on-site residents).
- Operations: This time period, relating to the duration of the facility operating life, was used to assess social impacts associated with facility operations. The period was also used to establish the baseline future scenario of social conditions without the proposed facility.
- Decommissioning and Post-Closure: At least 20 years following initial operation, a decision will be made to decommission the facility. This time period was used to assess the impacts associated with the decommissioning and post-closure activities.

4.7 RELATIONSHIP TO OTHER PHASE 4B STUDIES

Inputs were required from other consultants to carry out the social impact assessment. For example, technical inputs concerning the noise, visual intrusion and air emissions associated with facility operations, were used to assess the disruption of residents' daily activities and/or use and enjoyment of property. Similarly, IER provided data which were used as inputs to other Phase 4B Studies. Table 4.1 provides the relationship of the other Phase 4B studies to the social impact assessment.

TABLE 4.1 RELATIONSHIP OF THE SOCIAL IMPACT ASSESSMENTSTUDY TO OTHER PHASE 4B STUDIES

Study	Consultant	Relationship to Social Impact Assessment
Agricultural Impacts	Ecologistics Limited	• Ecologistics provided: - computer compilation of the resident interviews and access route drop-off survey. - agricultural trend data. • IER provided: - the location of residences. - survey data on the characteristics of farm households. • Joint design of resident interview forms. • Joint definition of the local community boundary. • Exchange of information obtained through visits to existing hazardous waste management facilities.
Economic Impacts	Morehouse Economic Planning Consultants	• Morehouse provided: - economic baseline and trend data (eg. employment). - projected facility-related employment and in- migration. - population projections. - severance and consent data. • IER provided information on businesses through the resident interviews and access route drop-off survey.
Visual and Lighting Impacts	EDA Collaborative Inc.	• EDA provided: - visual and lighting impact zones, - technical assessment of visual and lighting impacts - recommended impact management measures. • IER provided the location of dwellings within the impact zones.
Atmospheric Conditions	Ontario Research Foundation (ORF)	• ORF provided: - the dust impact zone. - the technical assessment of odour and dust impacts and recommended impact management measures.
Land Use Impacts	Leon Kentridge Associates Ltd. (LKA)	• LKA documented: - existing land use and future land use designations. - planned and proposed developments. - municipal servicing expansion plans.

Study	Consultant	Relationship to Social Impact Assessment
Noise Impact	S. S. Wilson and Associates Ltd. (sub-consultant to M. M. Dillon Limited)	• S. S. Wilson and Associates provided the technical assessment of noise associated with facility operations and use of the access route, including: - noise impact zones. - sound level predictions. - recommended mitigation measures. - access route vibration impact. • IER provided the location of dwellings.
Transportation Impact	M. M. Dillon Limited	• M. M. Dillon provided traffic and truck volume data. • IER provided social inputs into the assessment of site entry point alternatives and Silverdale Road/Schram Road realignment
Engineering	Monenco Limited	• Monenco provided facility characteristics and information on construction, operations and decommisioning activities. • IER provided social input into alternatives for site servicing and design.
Risk Assessment	Environ Corp.	• Environ Corp. provided: - probabilities of facility-related accidents and spills. - transportation-related risk impact zones.
Hydro Servicing	Ontario Hydro	• IER provided social inputs for the assessment of hydro servicing options.

PART 2

THE SOCIAL IMPACT OF THE OWMC FACILITY IN WEST LINCOLN

CHAPTER 5

STUDY AREAS

5.1 INTRODUCTION

A number of study areas and impact zones were used during Phase 4B for data collection and/or the analysis of social impacts. This chapter documents these study areas and impact zones, their rationale, the methods by which they were defined and their application in the study.

This chapter is divided into the following sections. Section 5.2 provides an overview of the study areas and impact zones employed in Phase 4B; Section 5.3 documents the study areas; and Section 5.4, the impact zones.

5.2 STUDY AREAS AND IMPACT ZONES

During the initial stages of Phase 4B, the social consultant delineated a study area around the proposed site which was used generally for data collection.[1] This study area encompasses the area within approximately five (5) kilometres from the site. A 150 metre and 500 metre study area was identified along both sides of the access route.[2] Like the site study area, the access route study area formed the basis for much of the data collection.

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1. This study area corresponds with the community boundary. The study area is based on retail sales boundaries of local businesses, discussions with local residents and key contacts, the elementary school district boundary, historical township boundaries, and natural features (e.g. the Welland River), with input provided by the agricultural and economic consultants.
2. The 150m and 500m study areas were based on the risk impact zone developed by the risk consultant, Environ Corp.

Within these data collection study areas other study areas and impact zones were defined to facilitate the assessment of the impacts associated with the proposed facility. The study areas and impact zones are listed below.

Study Area
- Site
- Local Community
- Adjacent (Access Route)
- 0 - 150 metres Study Area (Access Route)
- 150 - 500 metres Study Area (Access Route)
- Community and Region

Impact Zones
- Noise Impact Zones
- Visual Impact Zones
- Dust Impact Zone
- Lighting Impact Zone
- Cumulative Impact Zone

A number of the impact zones noted above relate to specific impacts for which zones have been identified. The noise, visual intrusion and dust impact zones have been measured and delineated by other consulting specialists (S.S. Wilson and Associates 1987; EDA Collaborative Inc. 1987; Ontario Research Foundation 1987). The lighting impact zone was developed through discussions with consulting specialists. These zones are discussed in various parts of Section 9.5.

No impact zone was delineated for odour. Based upon the technology chosen by OWMC, it was determined by the Ontario Research Foundation (ORF) that odours would rarely occur beyond the site boundaries. However, given the potential for occasional occurences of odours off-site and the experiences at some existing facilities, odour impacts have been considered.

The study areas and impact zones used in Phase 4B are refinements or additions to those employed in the Phase 4A analysis. Changes were made on the basis of more detailed and/or new information. A number of study areas and impact zones were added to facilitate the detailed assessment undertaken in Phase 4B. The study areas and impact zones of Phase 4B are discussed in the following sections.

5.3 STUDY AREAS

5.3.1 SITE

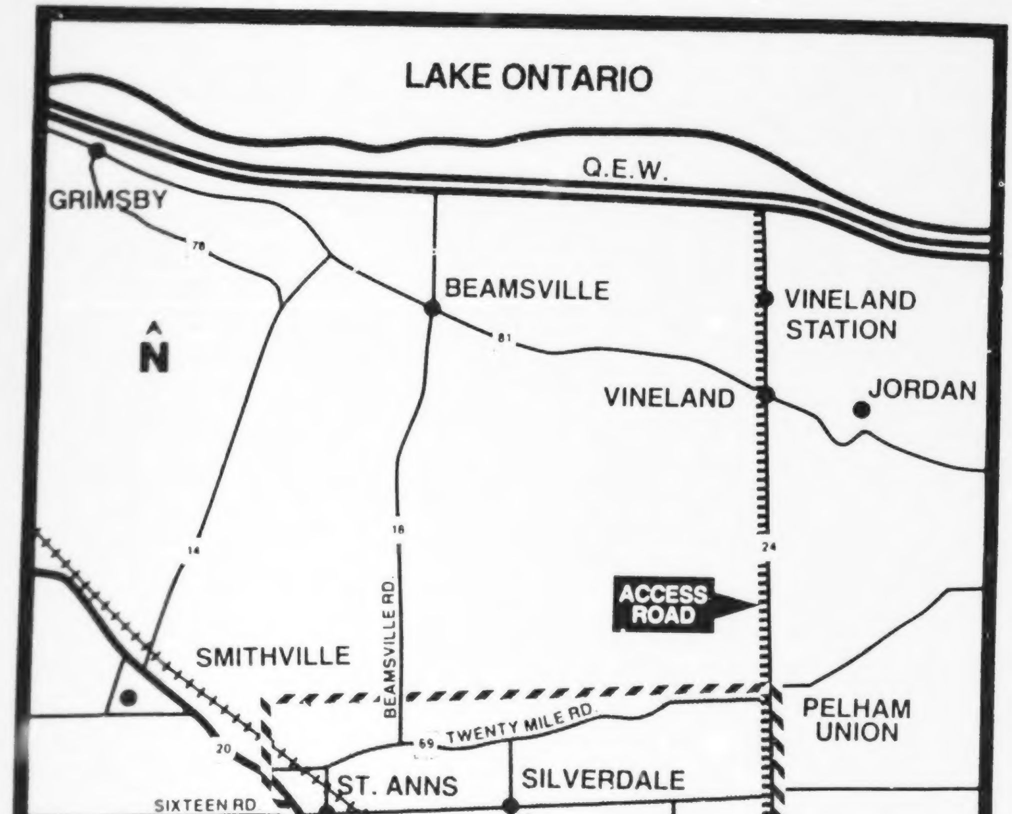
The proposed site is bounded by Highway 20 in the north, Schram Road in the east, and Vaughan Road in the south. The western limit of Lot 17, Concession 3, is the site's western boundary. The study area relates to the residents who would be displaced.

5.3.2 LOCAL COMMUNITY

Few areas possess the four elements that make up a community - geographic boundaries, ethnic or cultural identity, psychological unity and concentrated use of facilities - to any significant measure. That is, few communities exist in the ideal sense (Finsterbusch 1980, 87). Modern mobility and urbanization have extended the distances travelled by rural residents for retail goods and other services and permit them to maintain friendships beyond their community boundaries. The aim in defining the local community around the proposed site was to identify the area over which residents expressed a sense of local unity and identity and within which the direct impacts of the facility might be experienced. The effects experienced as a result of the facility would include both standard (direct and indirect) and special impacts.

The local community was defined using a number of methods. Local business owners/operators nearest to the OWMC site were interviewed to identify their retail service boundaries. Discussions were held with local residents and key contacts to identify the area which they identified as their community. A review of historical township boundaries, the elementary school district boundary and natural features such as the Welland River, aided in defining the local community boundary.

The local community encompasses the eastern two-thirds of the former Gainsborough Township (Figure 5.1). It is bounded by the Town of Lincoln in the north, Town of Pelham in the east and Township of Wainfleet in the south. The western limit is Highway 20 and Regional Road 27.



OWMC Ontario Waste Management Corporation

▰▰▰▰▰ Local Community

LOCAL COMMUNITY

Figure 5.1

5.3.3 NEARBY MUNICIPALITIES AND REGION

This study area consists of the nearby municipalities of Township of West Lincoln, the Towns of Lincoln and Pelham, and the Region of Niagara. The study area served to identify and evaluate the broader community impacts that could be associated with the facility and the access route. These impacts include effects on community character and stability.

5.3.4 ADJACENT STUDY AREA - ACCESS ROUTE

Properties with any boundary or part of a boundary (e.g., a corner) abutting the access route were included within the adjacent study area. It was assumed that residents and community and recreation features adjacent to the access route would be the most vulnerable to all potential nuisance impacts due to their close proximity to the access route. This study area was used to collect primary data regarding the residents along the access route.

5.3.5. 0-150 METRES STUDY AREA - ACCESS ROUTE

This study area includes all those properties located up to 150 metres from both sides of the access route. The study area is based on a risk zone determined by the risk consultants, Environ Corp. (M.M. Dillon Ltd. 1985). It is assumed that the residents and community and recreation features contained within this study area may experience disruption as a result of evacuation should a spill occur involving a volatile substance. Other impacts could also be experienced, for example dust and reduced accessibility, due to proximity to the access route.

5.3.6 150-500 METRE STUDY AREA - ACCESS ROUTE

This study area includes all those properties located between 150m and 500m of both sides of the access route. As with the 0-150m study area, this study area is based on a risk zone determined by the risk consultants, Environ Corp. (M.M. Dillon Ltd. 1985). It is assumed that the residents and community and recreation features located in this study area may experience disruption due to evacuation as well as other nuisance impacts associated with the increased truck traffic, but to a lesser extent than those closer to the access route.

5.4 IMPACT ZONES

5.4.1 NOISE IMPACT ZONES - SITE VICINITY

Noise impact zones are defined around the site based on noise contour lines provided by S.S. Wilson and Associates, a subconsultant to M.M. Dillon Ltd.

The noise impact zones are refinements to those used in Phase 4A. The two noise impact zones applied in Phase 4A related to estimated daytime and nighttime sound levels. Additional engineering information in Phase 4B permitted the definition of more precise noise impact zones (S.S. Wilson and Associates 1987). Three noise impact zones have been applied. The first relates to the estimated daytime sound levels associated with the landfill activities. The second noise zone relates to the estimated nighttime sound levels associated with the plant operation (physical/chemical treatment plant and incinerator) at the operating capacity of 150,000 tonnes/annum (t/a). The third noise impact zone has been estimated for the daytime sound levels associated with the on-site construction activities.

These zones permitted the identification of the residents and community and recreation features which could experience changes over their existing sound environment and those that could experience sound levels above the Ministry of the Environment Guidelines (Ministry of the Environment 1977).

5.4.2 NOISE IMPACT ZONE - ACCESS ROUTE

A noise impact zone is delineated on each side of the access route to account for the change in daytime sound levels that might result from the increased truck traffic. The zone applies to daytime sound levels as the delivery of hazardous waste material is expected to take place between 7:00 am and 4:00 pm. The noise impact zone applied in Phase 4B was a refinement of that used in Phase 4A, based on adjustments to the truck volumes associated with the facility.

The noise impact zone permitted the identification of the population and community and recreation features which could experience sound levels exceeding the Ministry of the Environment Guidelines.

5.4.3 VISUAL IMPACT ZONES

Two of the visual impact zones developed by EDA Collaborative were applied in Phase 4B (EDA Collaborative Inc., 1987). The high visual impact zone includes the area adjacent to the site and extends approximately 0.8 km from the site. In some areas the zone extended further due to the open character of the landscape.

The moderate impact zone extends approximately 0.8 km to 2 km from the site. In some areas the zone is closer than 0.8 km where parts of the facility are screened by dense vegetation that allows only a small portion of the facility to be seen. The visual impact zones of Phase 4B are refinements of those in Phase 4A; the analysis in Phase 4B has taken into account screening provided by natural and man-made features (EDA Collaborative 1987). The visual impact zones were used to determine the visual intrusion of the proposed facility on nearby residents and community and recreation features.

5.4.4 DUST IMPACT ZONE

A dust impact zone measuring approximately 460 metres around the site was delineated by ORF (Ontario Research Foundation, 1987). This represented an additional nuisance impact zone over those provided in Phase 4A (in Phase 4A, ORF used study areas of 5 km and 20 km radii to assess fugitive emissions and stack emissions, respectively). The dust impact zone permitted the identification of residents and community and recreation features that could experience a dust impact.

5.4.5 NIGHT LIGHTING IMPACT ZONES

Night lighting will be used at the facility both for security reasons and to extend the hours of operation of the landfill during periods when daylight hours are shorter (i.e., during the winter it will become darker earlier and lighting will be necessary to permit completion of a full 8 hour shift). The visual impact zones were used as a basis for delineating lighting impact zones in the absence of a technical means of doing so. Lighting impact zones were defined by EDA Collaborative Inc. by enclosing all of the area to the outside boundaries of the high and moderate visual impact zones.[1] It is assumed that all residences and any community or recreation features between the site and the outside boundary of the moderate visual impact zone will be able to see a visible glow from the facility lighting.

5.4.6 CUMULATIVE IMPACT ZONE

It is asumed that the effects of the nuisance impacts will be cumulative: together they will have greater ramifications for the disruption of daily activities, use and enjoyment of property and disruption of operations of community and recreation features than they would have individually. For the purpose of the social assessment, all residences and community and recreation features within the impact zones noted above were reviewed to identify those that could be affected by two or more nuisance impacts. The boundaries of the cumulative impact zone were delineated to encompass the properties on which these residences and features are located. The application of this cumulative impact zone assisted in the assessment of the significance of the nuisance impacts for those residents and community and recreation features located within the zone's boundaries.

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[1] Within the area generally encompassing the high and moderate visual impact zones there were properties or portions of properties that, due to screening, would have a limited or no view of the facility and were thus excluded from the high and moderate visual impact zones. It was assumed that despite this screening, a glow in the sky would be visible from all properties. Refer to EDA Collaborative Inc., 1987.

CHAPTER 6
EXISTING CONDITIONS

6.1 INTRODUCTION

In 1985, the Ontario Waste Management Corporation (OWMC) selected its preferred site for an industrial waste management facility within the Regional Municipality of Niagara, in the Township of West Lincoln. A requirement of OWMC's submission under the Ontario Environmental Assessment Act (EA Act) is a description of existing conditions at the preferred site and in the surrounding areas. This chapter documents the existing conditions for the social analysis. The description of existing conditions will be used as a baseline for identifying and evaluating the potential effects that the development of the OWMC facility could have on the community and individuals.

The chapter is divided into 4 sections. Section 6.2, 'Social Overview of West Lincoln and the Former Gainsborough Township', describes the geographic location, historical development, land use and land use policies in the area. Section 6.3, 'Characteristics of the Local Community', describes the areas surrounding the site. The discussion includes the socio-demographic characteristics of residents and households, characteristics of community and recreation features, social structure and lifestyle. Section 6.4, 'Characteristics of On-Site Residents', reviews the characteristics of the households and residents on-site. Section 6.5, 'Access Route Characteristics', examines the characteristics of the residents, communities and community and recreation features along the access route, the use of the roads by the residents and current issues relating to the roads.

6.2 SOCIAL OVERVIEW OF WEST LINCOLN TOWNSHIP AND THE FORMER GAINSBOROUGH TOWNSHIP

6.2.1 GEOGRAPHIC LOCATION

The OWMC preferred site is located within the Township of West Lincoln, the most westerly municipality in the Region of Niagara. West Lincoln is bordered in the west and northwest by the Region of Hamilton-Wentworth and in the southwest by the Region of Haldimand-Norfolk. Local municipalities with the Niagara Region border on the Township's remaining boundaries: the Town of Pelham in the east, the Towns of Grimsby and Lincoln in the north, and Wainfleet Township in the southeast.

West Lincoln is comprised of the former Townships of Gainsborough, Caistor and South Grimsby. It is within the former Gainsborough Township, in the eastern section of West Lincoln, that the OWMC preferred site is situated. Figure 6.1 provides the location of the former Gainsborough Township and West Lincoln Township in relation to other municipalities in Niagara Region and the neighbouring regional municipalities.

6.2.2 HISTORIC OVERVIEW[1]

Settlement of the former Gainsborough Township began in earnest during the late 1700s. The first white settlers in the Township were United Empire Loyalists, the majority arriving from New York, New Jersey, or Pennsylvania following the American Revolution. In order to provide these settlers and the Indian Loyalists with promised free grants of land, Governor Haldimand purchased parcels of land from the Mississauga Indians, including what is now known as the Niagara Region, in 1784.

As of 1791, the former Township of Gainsborough, along with the Townships of Caistor and South Grimsby, became part of Lincoln County. As defined by Lieutenant Governor John Graves Simcoe, Lincoln County consisted of the entire Niagara Peninsula as well as an area to the west. While it is not known who the first Gainsborough settler was, or where the first homestead was established, many of the names which appear on early Crown Patents are still familiar in the Township.

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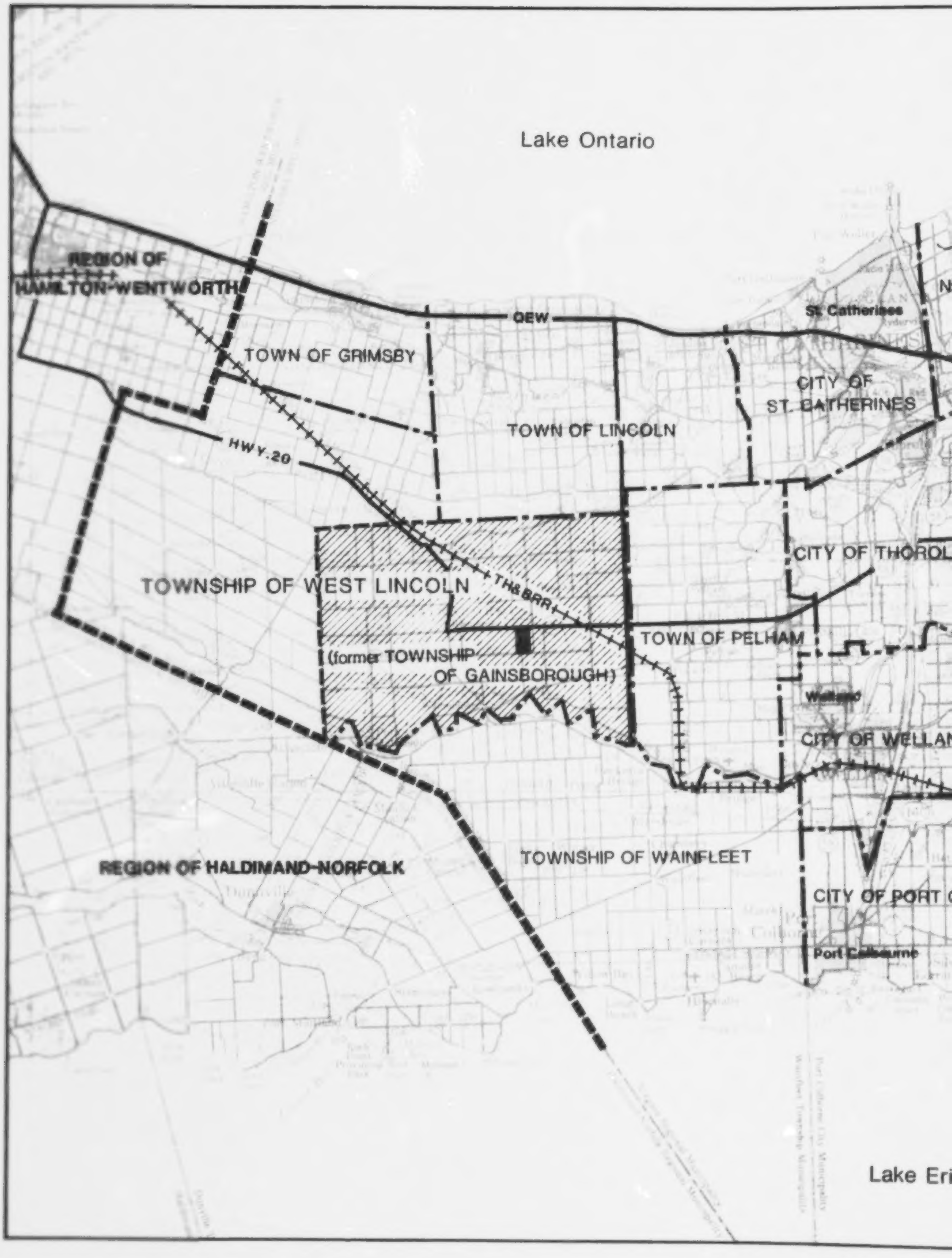
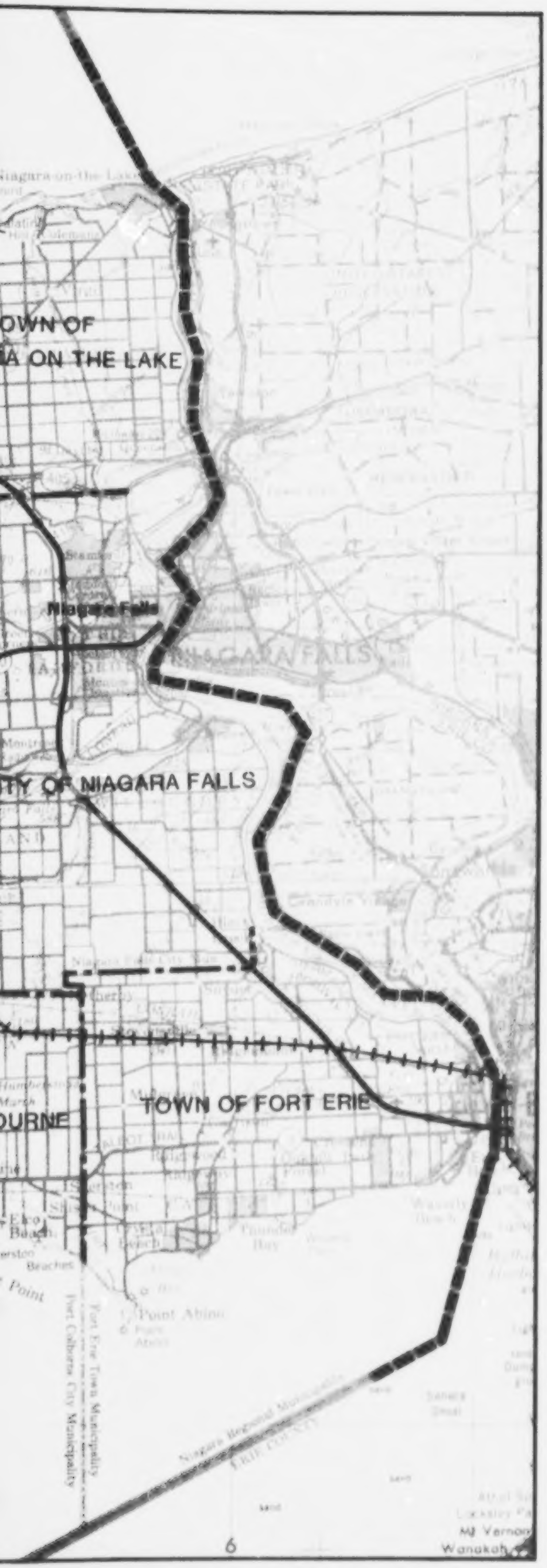
[1] For a detailed historic overview of the former Gainsborough Township, see Museum of Indian Archaeology 1987.


Lake Ontario
REGION OF HAMILTON-WENTWORTH
QEW
TOWN OF GRIMSBY
TOWN OF LINCOLN
St. Catherines
CITY OF ST. CATHERINES
HWY.20
TOWNSHIP OF WEST LINCOLN
TH&BRR
(former TOWNSHIP OF GAINSBOROUGH)
CITY OF THOROL
TOWN OF PELHAM
Welland
CITY OF WELLAN
TOWNSHIP OF WAINFLEET
REGION OF HALDIMAND-NORFOLK
CITY OF PORT C
Port Colborne
Lake Eri



OWMC Ontario Waste Management Corporation

Consultant

ier

Legend:

▬▬▬ Niagara Region Municipal Boundary

–·– Area Municipality Boundary

▨ Former Township of Gainsborough Boundary

▮ Preferred Site

— Major Road

++++ Toronto, Hamilton & Buffalo Railway

0 5 10mi

0 5 10 15 km

1:250000

Geographic Location of Former Gainsborough Township and West Lincoln Township

March 1988 FIGURE 6.1

Descendents of some of the original Gainsborough families still live here: the Graceys, Beamers, Hortons, Comforts, Heaslips, Lanes, McPhersons, Freures, and Crowns. A number of families, such as the Comforts, Heaslips and Lanes, still farm family land received by Crown Patents in the 1790s.

The Welland River and Twenty Mile Creek provided the easiest access into the former Township and it was near these two waterways that the earliest of the settlers established themselves. The central portion of the former Township, between St. Ann's and Wellandport, was not so readily accessible and was settled at a later date. The early settlers were primarily farmers; however, with them came blacksmiths, millers, innkeepers and shopkeepers, woodworkers and those who operated sawmills and tanneries. Many of these latter settlers helped establish small communities in the area, many of which are still in existence, including Wellandport, Boyle, St. Ann's, Bismarck and Silverdale.

Prior to World War I, immigrants into Gainsborough were mainly of British and German origin. After the war, while there were still some British immigrants, many new people were arriving from Europe, particularly Poland and the Ukraine. Some came directly while others had settled originally in other parts of Canada.

Since World War II, there has been an even greater influx of new people to Gainsborough, mainly from Europe. The post-war Dutch immigration began in 1948 and presently a significant number of Dutch people own farms in Gainsborough. Many are dairy farmers, some raise pigs or poultry, while others operate greenhouses. Many Greek people have also settled in the area, taking a special interest in poultry farming.

In 1970, with the advent of Regional Government, the former Townships of Caistor, Gainsborough and South Grimsby became Wards 1, 2, and 3 in West Lincoln within the Regional Municipality of Niagara. The Council for the Township of West Lincoln is composed of six aldermen (two for each ward) and a mayor who is elected-at-large.

6.2.3 LAND USE AND LAND USE POLICIES - WEST LINCOLN TOWNSHIP

Today, West Lincoln Township remains a rural-agricultural community. The dominant land use is agriculture; the 1975 Official Plan reports that 83.3% of the land is rural or vacant and the majority of the rural land is agricultural (Township of West Lincoln 1975, A17-18). Urban development, that is residential, commercial and industrial land uses, is generally concentrated in Smithville, the Township's main urban centre, and a number of hamlets. Rural residential and farm residential developments are located throughout the municipality. Rural non-farm development is found primarily along or near the main roads.

Smithville is situated in the north central portion of the Township, on Highway 20 and Twenty Mile Creek. The Town has the largest population of all the urban settlements in West Lincoln (approximately 1,832).[1] Smithville functions as a service centre for its residents and those of the surrounding rural area, providing a level of services that meets the residents' daily needs. Facilities include an arena, fairgrounds, several schools and churches and a small shopping mall in addition to the main street shopping area. Smithville is also the site of the Township's industrial park and municipal offices.

Wellandport is the second largest urban area in West Lincoln with a population of 210 people. It is situated on the Welland River, at the junction of Regional Road 27 and Regional Road 63 (Canboro Road). In addition to residential development, Wellandport has several churches, stores, a library and community centre.

Other smaller hamlets are located throughout the Township and offer a few small commercial services and public facilities to nearby residents.

The Official Plan of the West Lincoln Planning Area was adopted by Township Council in 1975. The Plan designates most of the land within the Township for rural uses. Land uses permitted under this designation are agriculture, forestry and activities connected with soil and wildlife conservation (Township of West Lincoln 1975, 10-12).

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[1] Niagara Region Planning Office, 1985.

Policies applying to development in rural or agricultural areas are intended to preserve agriculture, protect existing uses in the rural area and reduce conflicts among permitted uses. The Plan includes policies aimed at curtailing the extensive non-farm residential and commercial development that had been occurring along the main rural roads prior to 1975. Urban development is directed into the hamlet areas and Smithville. The industrial park in Smithville is intended to be the site of most of the Township's future industrial development.

The West Lincoln Official Plan is currently being updated to bring it into conformity with the Regional Niagara Official Plan. The Amendment reconfirms the municipality's vision of the Township as remaining primarily a rural-agricultural community but at the same time allows for new residential development to accommodate an anticipated increase in households. The amendment also provides for additional employment opportunities for its labour force through the policies relating to future commercial and industrial development.

The Plan's policies are aimed towards preserving prime agricultural lands for agriculture and ensuring the economic viability of farm units. Non-agricultural development is directed to areas of lower agricultural capability, (i.e. those designated as rural) and areas identified primarily for non-agricultural uses (hamlets and villages). By encouraging urban development in the most suitable areas it is hoped that the desirable qualities of both rural and urban uses can be maintained (Township of West Lincoln 1986, 4-5).

One of the main features of the Amendment is that it distinguishes between rural and agricultural areas in the Township. Uses permitted in the agricultural designation include agriculture, farm-related residential uses, forestry, conservation, and ancillary uses such as small-scale commercial and industrial uses related to and serving the surrounding agricultural area. The rural designation is applied to areas of poorer agricultural capability. Uses permitted include those under the agricultural designation as well as non-farm residential development, non-agricultural uses, and small-scale commercial and industrial uses. Non-farm residential development and non-agricultural uses must meet criteria established in the Official Plan to ensure compatibility with existing uses, and maintenance of the economic viability of existing agricultural uses. Rural designations occur in the western portion of West Lincoln Township.

6.3 CHARACTERISTICS OF THE LOCAL COMMUNITY

This section describes the characteristics of the local community surrounding the OWMC preferred site. Included is a discussion of the socio-demographic characteristics of area residents, community and recreation features, social structure, and residents' lifestyle.

The local community is located in the eastern portion of the former Gainsborough Township. It has been identified as the area bounded by the West Lincoln/Lincoln municipal boundary, Regional Road 24, the Welland River and Regional Road 27/Highway 20. The location of the local community and its boundaries are shown in Figure 6.2.[1].

The description of the local community is based on the following information sources: interviews with residents held during the summer of 1986; census data for the former Township of Gainsborough and, where appropriate, West Lincoln, the Niagara Region and Ontario; discussions with local residents, community leaders and representatives of community and recreation features; a field survey of dwelling locations undertaken in 1984 and updated in January, 1987; a field survey in January, 1986 of community and recreation features; regional assessment roll data; municipal planning documents; and historical materials.

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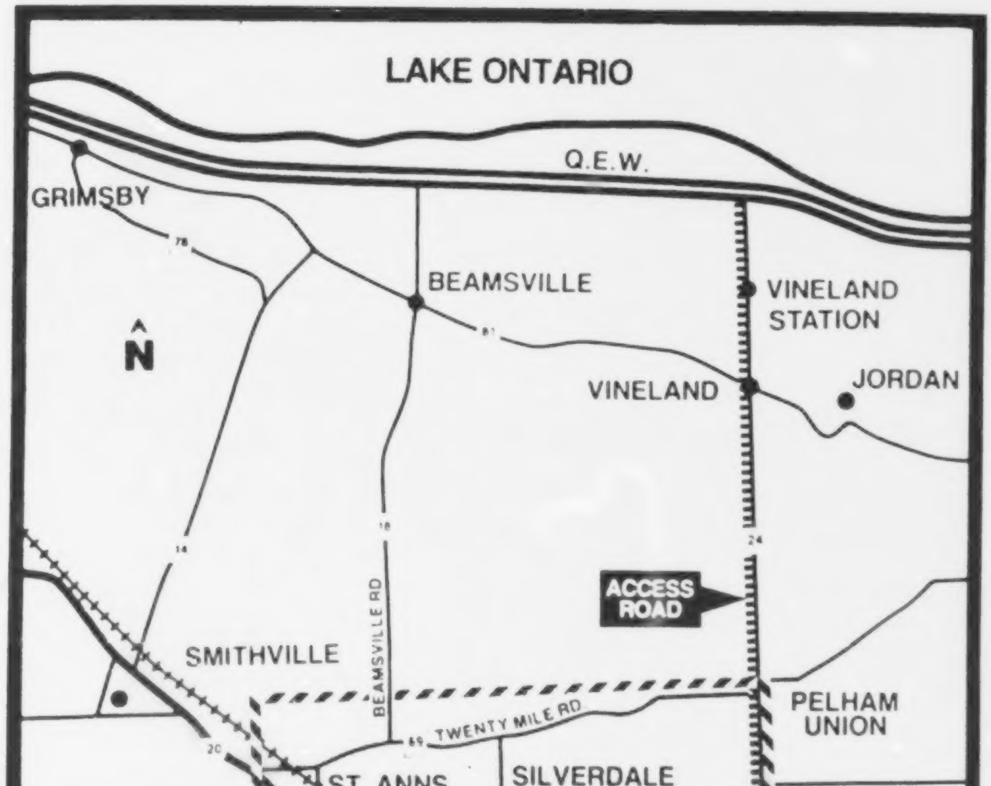
[1] See Chapter 5.0, 'Study Areas', for a discussion on the definition of the local community.



OWMC, 1985

OWMC Ontario Waste Management Corporation

▱▱▱▱▱ Local Community

PREFERRED SITE &
LOCAL COMMUNITY

Figure 6.2

6.3.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

This section provides a description of the population, households and labour force in the local community. Information has been obtained primarily from the resident interviews undertaken in the local community during the summer of 1986.[1] These data are supplemented with information from the Population Census for the former Township of Gainsborough.[2] Where appropriate, census data for West Lincoln, the Niagara Region and Ontario are used to illustrate differences or similarities.

Population Characteristics

An estimated 2,275 residents live in the local community.[3] This population represents approximately 65% of the total population of former Gainsborough Township (3,495 in 1981). According to 1981 Census data, Gainsborough Township grew by approximately 14% in the period between 1971 and 1981, although a lower rate of growth was recorded between 1976 and 1981 than for the 1971 to 1976 period. Some of this growth has most likely occurred in this eastern portion of the Township.[4]

Data from the resident interviews indicate that the local community has a similar age structure as the former Gainsborough Township (see Table 6.1).[5] Eight percent (8%) of the population in the surveyed households are of pre-school age (0-4 years); 9% of the Gainsborough population are pre-schoolers. Senior citizens (65 years of age or older) represent 7% of both the surveyed residents and population of Gainsborough. School age children and teens (5-19 years) comprise 27% and 33% of the population of surveyed households and those in Gainsborough respectively. The remaining 58% of the population in surveyed households are adults between the ages of 20 and 64 years; adults in this age group represent 51% of the population in Gainsborough.

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[1] All references to question numbers made below are to those contained in the Phase 4B Resident Interview (Appendix D) unless otherwise noted.

[2] As noted in Section 5.3, the local community is located in the eastern portion of the former Gainsborough Township. The geographic boundaries of the Township closely approximate the local community, and form the smallest unit for which Statistics Canada provides Census data. This information is used to provide trend data or data that is not available at the local community level and to support the data obtained through the resident survey.

[3] Population of the local community was estimated using the total of: (1) the population reported in the surveyed households and, (2) the number of dwellings and average household size (1981, former Gainsborough Township) to estimate the population in non-surveyed households.

[4] New residential development has occurred in the local community in the eastern areas just west of Regional Road 24.

[5] Question 102.

TABLE 6.1
TOTAL POPULATION AND AGE STRUCTURE, FORMER GAINSBOROUGH TOWNSHIP AND SURVEYED RESIDENTS

Age Group	Surveyed Residents		Former Gainsborough Township	
	#	%	#	%
0-4	64	7.9	305	8.7
5-19	221	27.1	1155	33.0
20-64	473	58.1	1775	50.8
65+	56	6.9	260	7.4
Total	814	100.0	3495	100.0

	Niagara Region	Ontario
	%	%
0-4	6.4	6.9
5-19	25.0	24.4
20-64	57.1	58.6
65+	11.4	10.1
Total	100.0	100.0

Sources: Statistics Canada, 1981 Census; IER, Phase 4B, Resident Interviews, 1986 Question 102.

Both the local community and former Gainsborough Township have a younger population than the Niagara Region and Ontario, with higher proportions of children in the 0-4 and 5-19 age groups and fewer senior citizens (Table 6.1).

The age structure data for Gainsborough Township indicates that it has not shared in the trend of an increasing proportion of senior citizens evident in the Niagara Region and Ontario. The proportion represented by this age group has instead remained relatively stable. This can be attributed to the limited services and facilities available for seniors in rural areas, which provide incentives for them to move to urban areas.[1]

Approximately 68% of the population in surveyed households are non-farm residents, the remaining 32% are farm residents. This structure of farm and non-farm population is similar to that in the 1981 Census for the former Gainsborough Township area. The Census data indicates that 65% of the population are non-farm residents and 35% are farm residents. Information on the farm/non-farm population structure is presently not available for Niagara Region. The percentage of farm residents in Ontario is much lower (approximately 3%) than that for Gainsborough and the local community, with a correspondingly higher proportion of non-farm residents (97%).[2] The high proportion of farm residents in the local community and Gainsborough reflect the local importance of agriculture and the rural nature of this area.

Prior to World War I, immigrants to the area were largely of British or German origin. Since 1920 the area has attracted immigrants of Dutch, Polish, Ukrainian and Greek ancestry. Table 6.2 indicates the ethnic composition of surveyed residents[3] and the population of the former Gainsborough Township. Persons of British origin comprise the majority of the population. Approximately 40% of the survey respondents reported British ancestry; 48% of residents in Gainsborough Township are of British background. The data shows that the Dutch represent the other major ethnic group, accounting for 30% of the surveyed respondents and 26% of the population of Gainsborough.

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[1] Refer to Chapter 7, 'Baseline Future Scenarios', for a discussion of past trends in age structure.

[2] From Statistics Canada, 1981 Census.

[3] Question 105.

TABLE 6.2
ETHNIC COMPOSITION
SURVEYED RESIDENTS AND FORMER GAINSBOROUGH TOWNSHIP

Ethnic Group	Surveyed Respondents[1,2]			Former Gainsborough Township[2]	
	#	%		#	%
British	81	39.7		1660	47.7
Dutch	62	30.4		905	26.0
German	21	10.3		170	4.9
French	8	4.0		10	0.3
Polish	11	5.4		90	2.6
Ukrainian	5	2.4		85	2.4
Italian	5	2.4		n/a	
Greek	3	1.5	7.8%	n/a	
Yugoslavian/Czech	3	1.5		n/a	
Other	5	2.4		555	16.0
Total	204	100.0		3475	100.0

Sources: Statistics Canada, 1981 Census; IER, Phase 4B, Resident Interviews, 1986. Question 105.

Notes:

1. Over 25% of the survey respondents reported their ethnic background as Canadian. The figures provided above have been adjusted to exclude these respondents to permit comparison with the Census data.
2. Some differences in the recording of ethnicity exist between the survey data and the Census data. Individuals reporting multiple origins are recorded in the "other" category in the Census data. In the resident interview data, every ethnic origin provided by respondents has been recorded in the appropriate category.

Residents of German background account for 10% of the surveyed respondents and 5% of the population of Gainsborough. The Polish and Ukrainian communities comprise smaller proportions of interviewed residents and Gainsborough residents. Although not evident from the census data for former Gainsborough Township, there is a local concentration of people of Greek descent; 1.5% of the respondents to the survey reported Greek ancestry.

Table 6.3 shows the religious composition of residents in the former Gainsborough Township and for interview respondents. In the former Gainsborough Township, the majority of the population is Protestant (83.2%). The United Church comprises approximately 31% of the population. The Protestant denominations include the Christian Reformed Church, to which a large segment of the Dutch community belong. This group accounts for approximately 16% of the population. The Catholic denomination represents 10% of the population while those of the Anglican faith comprise 7% of the population. In comparison, the Niagara Region and Ontario reflect a different pattern of religious affiliation with a significantly higher proportion affiliated with the Catholic Church (36%) and a smaller proportion affiliated with the United Church (16% in Niagara Region and 19% in Ontario). The Anglican faith accounts for higher proportions of residents of Niagara Region (15%) and Ontario (14%). Affiliation with the Christian Reformed Church was reported by less than one percent of Ontario's population as compared to 16% in the former Gainsborough Township.[1]

Religious composition is not available for the local community. However, respondents to the resident interviews were requested to provide the name of the church they attended. While not directly comparable, the responses to this question tend to concur with the data for religious composition in the former Gainsborough Township (see Table 6.3). Protestant affiliations represent the largest proportion (80%). Approximately 23% of the respondents reported attending a United Church, and 20% a Christian Reformed Church.[2] Three percent (3%) attend Anglican churches and 13%, Roman Catholic Churches.

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1. Data on affiliation with the Christian Reformed Church are not available for Niagara Region.
2. Question 75.

TABLE 6.3
RELIGIOUS COMPOSITION
FORMER GAINSBOROUGH TOWNSHIP AND SURVEYED RESIDENTS

Surveyed Religious Composition	Former Gainsborough Residents[1]	Township[1]
	%	%
Catholic	13.2	10.2
Protestant	79.7	83.2
United Church	23.1	31.4
Christian Reformed	29.7	15.7
Anglican	2.7	7.4
Other Protestant	24.2	28.7
Eastern Orthodox	1.1	1.8
Jewish	0	0.4
Eastern Non-Christian	0	0
Other	6.0	0
No religious preference	not available	4.3

Sources: Statistics Canada, 1981 Census; IER, Phase 4B, Resident Interviews, 1986. Question 75.

Notes:

1. The percentages for former Gainsborough Township indicate reported religious affiliation. The local community values are derived from the churches attended, as reported by residents in the interviews and are not directly comparable to the figures for the former Gainsborough Township.

The churches found within the local community confirm the strong affiliations with the Protestant faiths noted above. All of the churches are of the Protestant faith and draw the majority of their members from the local community or the former Gainsborough Township.[1] Many of these church congregations have been in existence for 100 to 200 years, established by early settlers. The Riverside Christian Reformed Church, attended primarily by the Dutch community, was established in the early 1950s shortly after the first wave of Dutch immigrants arrived in the area.

In terms of length of residency, the interview data reveals that 52% of the respondents have lived at their current address for more than 10 years.[2] In comparison, the 1981 Census data for the former Gainsborough Township indicates that approximately 38% of residents have lived at the same address for more than 10 years. It is possible that during the five (5) years since 1981, the proportion of residents living at their current address for more than 10 years has increased in Gainsborough Township and is closer to the length of residency reported by survey respondents. It is also possible that more long-term residents chose to participate in the resident survey than did short-term residents.

Survey respondents were asked to provide information on length of residence in West Lincoln. A significant majority, 176 (71%), have lived in the municipality for more than 10 years; 19% have always lived in West Lincoln.[3]

Those responding to the interviews have attained a higher level of education than the population of former Gainsborough Township (Table 6.4).[4] Sixteen percent (16%) of the population in the interviewed households have elementary or some elementary education, as compared to 27.4% reported in the 1981 Census for the former Gainsborough Township. High school or some high school education has been attained by 54% of the interviewed population as compared to 50% in Gainsborough Township in 1981.

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1. Refer to Section 6.3, 'Characteristics of Community and Recreation Features', for a discussion of the churches in the area.
2. Question 1.
3. Question 2. Similar data is not collected in the population census by Statistics Canada and is unavailable for the former Township of Gainsborough.
4. Question 103. Some differences in definition exist between the resident survey and Census data. The Census obtained educational information for all residents 15 years and older. The resident survey obtained these data for residents 18 years and older. The addition of the education levels attained by residents 15-17 years of age in the survey data would provide results closer to those reported for Gainsborough in 1981.

TABLE 6.4
EDUCATIONAL ATTAINMENT
FORMER GAINSBOROUGH TOWNSHIP AND SURVEYED RESIDENTS

Highest Level of Education Attained	Surveyed Residents[1]		Former Gainsborough Township[1,2]	
	#	%	#	%
Elementary or some elementary	86	16.0	705	27.4
Secondary or some secondary	289	53.8	1275	49.6
College or some college	106	19.7	405	15.8
University or some university	56	10.4	185	7.2
Total	537	100.0	2570	100.0

Sources: Statistics Canada, 1981 Census; IER, Phase 4B, Resident Interviews, 1986. Question 103.

Notes:

1. Data for Gainsborough Township apply to all residents 15 years of age and over; data for the surveyed residents apply to residents 18 years of age and over. The addition of residents 15-17 years of age to the survey data would increase the proportion of residents attaining elementary or secondary education.
2. A trend towards attainment of a higher level of education has been observed in Gainsborough Township (as well as West Lincoln, Niagara Region and Ontario) and is anticipated to be continuing. The level of education in Gainsborough is likely higher in 1986 than indicated in the 1981 Census data. Refer to Chapter 7, 'Baseline Future Scenario', for a discussion of trends in education.

Twenty percent (20%) of the respondents have college or some college education in comparison to 16% in Gainsborough Township. Approximately 10% of the residents of the surveyed households have university or some university education as compared to 7% of Gainsborough residents in 1981.

The level of education has increased in Gainsborough Township between 1971 and 1981, a trend that is anticipated to continue.[1]

Household Characteristics

Data from the 1981 Census indicate that there are 945 households in Gainsborough Township. There are an estimated 642 households in the local community.[2] Data for the period between 1971 and 1981 indicate an increase in the number of households in the former Township of Gainsborough. This trend has been experienced in West Lincoln, Niagara Falls and Ontario and has likely occurred in the local community as well.[3]

A population of 868 was reported within the 256 households responding to the 1986 resident interview, indicating an average of 3.4 persons per household. This figure is slightly lower than the average household size of 3.6 reported for the former Gainsborough Township in the 1981 Census. However, trend data for Gainsborough indicates that there was a decline in the average number of persons per household between 1971 and 1981. It is anticipated that this trend has continued[4] and the average household size in 1986 for the former Gainsborough Township is most likely closer to that of the resident interview.

The average number of persons per household in both the local community and Gainsborough is higher than in both Niagara Region and Ontario (2.8). This is indicative of a rural agricultural community; historically, average household size has been higher in rural areas than in urban areas.

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1. Similar trends have been experienced in West Lincoln, Niagara Region and Ontario. Refer to Chapter 7, 'Baseline Future Scenario', for a discussion of past and anticipated future trends in education.
2. The number of dwellings in the local community has been used to approximate the number of households.
3. Refer to Chapter 7, 'Baseline Future Scenario', for a discussion of past trends.
4. Refer to Chapter 7, 'Baseline Future Scenario'.

The tenure of households in the local community is similar to that for households in the former Gainsborough Township: the majority of residents own their homes. The resident interview results indicate that 86% of the households own their homes;[1] the 1981 Census data for the former Gainsborough Township reports that 85% are homeowners. The proportion of owned dwellings has remained relatively constant between 1971 and 1981 in the former Gainsborough Township; a similar trend has most likely occurred in the local community.

The resident survey data indicate that 23% of the households earn an annual income of $50,000 or more.[2] Fifteen percent (15%) reported a household income of $40,000-$49,999; 14%, $30,000-$39,999; and 17%, $20,000-$29,999. The remaining 31% of households reported household incomes of less than $20,000. The 1981 Census data provides an average household income for the former Gainsborough Township of $25,193. The average household income in Gainsborough is slightly higher than the household income in West Lincoln ($25,050) and Niagara Region ($23,436) but slightly lower than for Ontario ($25,577).

Labour Force Characteristics

Of those Gainsborough Township residents 15 years of age or older, less than two-thirds (59.1%) are in the labour force but 96.3% of them are employed. Males represent 66.6% of the total labour force. While the 1981 labour force participation rate in Gainsborough Township (59.1%) is slightly less than that of West Lincoln (62.2%), the unemployment rate (3.6%) is below that of West Lincoln (4.5%), the Niagara Region (7.0%) and Ontario (6.6%). Similar information is not available at the local community level.

Table 6.5 indicates the occupation of surveyed residents and those in the former Gainsborough Township. The predominant occupations in the local community fall into the primary occupations category, with approximately 28% of those in the labour force reporting primary occupations. This characteristic is shared with Gainsborough Township (22.1%) and West Lincoln Township (17.3%). Included in this category are farming, agribusiness and horticultural occupations. The number of persons claiming

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[1] Question 4.

[2] Question 106.

TABLE 6.5
OCCUPATIONS
GAINSBOROUGH TOWNSHIP, 1981 AND SURVEYED RESIDENTS, 1986

Occupation	Surveyed Residents		Former Gainsborough Township	
	#	%	#	%
Managerial, administrative and related occupations	17	4.6	35	2.3
Teaching and related occupations	13	3.5	35	2.3
Medicine and health	8	2.2	40	2.7
Technological, social, religious and related occupations	12	3.3	55	3.7
Clerical and related occupations	20	5.4	135	9.0
Sales occupations	19	5.1	85	5.7
Service occupations	25	6.8	125	8.4
Primary occupations (includes farming, horticulture, animal husbandry, landscaping)	102	27.6	330	22.1
Processing occupations	15	4.1	100	6.7
Machining, product fabricating, assembling and repairing occupations	32	8.7	190	12.7
Construction trades occupations	26	7.0	95	6.4
Transport equipment operating occupations	21	5.7	120	8.0
Other	26	7.0	70	4.7
Not stated	20	5.4	75	5.0
Not applicable[1]	13	3.5	5	0.3
All occupations	369	100.0	1495	100.0

Sources: IER, Phase 4B, Resident Interviews, 1986; Question 104. Statistics Canada, 1981 Census of Canada

Notes:
1. Includes individuals who are unemployed

a farming occupation is not available for either the former Gainsborough Township or West Lincoln. The survey data indicates that 24.4% of those in the labour force are in farming and related occupations (see Table 6.5).[1] The relative importance of agriculture in the local community, Gainsborough Township and West Lincoln Township is illustrated when the percentage of the labour force in primary occupations (as noted above) is compared to that for Niagara Region and Ontario (4%).

Trend data for the former Gainsborough Township and West Lincoln Township indicate a decrease in the number of persons claiming a primary occupation between 1971 and 1981. This coincides with an observed trend towards increased mechanization, farm consolidation and part-time farming.

Another predominant occupation in the local community is machining and fabricating (8.7% of those in the labour force). Represented to a lesser extent are construction trades (7.0%) and service occupations (6.8%). The remaining occupation categories are represented by smaller proportions of those in the local community labour force.

In the former Gainsborough Township, predominant occupations include machining and fabricating (12.7%), clerical (9.0%), service (8.4%) and transportation (8.0%). The decline in primary occupations has been accompanied by increases in the management/administration, medical/health, technical/social/religious, clerical, and service occupations in the former Gainsborough Township and West Lincoln.

6.3.2 CHARACTERISTICS OF COMMUNITY AND RECREATION FEATURES

Twenty-three (23) community and recreation features are located within the local community. These include:

Gainsborough Central Elementary School
West Lincoln Co-op Nursery School
Bismarck United Church
Silverdale United Church
Emmanuel United Church
Bethel Community Church
Boyle Brethren in Christ Church
St. Ann's Community Church

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[1] Question 104.

Wellandport Community Centre and Park
Wellandport Post Office
Silverdale Community Centre
Wellandport Branch of the West Lincoln Public Library
Gainsborough Centennial Hall
Silverdale Gun Club
Niagara Regional Sportsmens Gun Club
Gainsborough Conservation Area
Riverview Golf and Country Club
Oddfellows Temple
Dufferin Masonic Lodge
Hitchcock Cemetery
St. Ann's Cemetery
Bismarck United Church Cemetery
Lane Cemetery

In addition to these community and recreation features, a trailer park/campground is proposed for development on Highway 20, east of the preferred site.

The locations of these community and recreation features are shown in Figure 6.3 (this figure is located in a pocket at the end of the report). Detailed information on each is provided in Appendix B. A brief description of each feature is provided below.

An additional facility, Riverside Christian Reformed Church, located in Wainfleet, just outside Wellandport on the south side of the Welland River, is included in the discussion that follows, as it is used extensively by members of the Dutch population living within the local community. It is situated just beyond the local community boundary.

Gainsborough Central Elementary School is located in Bismarck east of the junction of Regional Road 27 and Highway 20. As of January, 1986, the school had an enrolment of 379 students in junior kindergarten to grade 8. The school offers three (3) learning disability classes. A limited amount of community use of the school takes place during two evenings each week.

The West Lincoln Co-op Nursery School is located within Gainsborough Central Elementary School. The twenty-two (22) children enrolled as of March, 1986, come from West Lincoln, specifically St. Ann's, Smithville, Wellandport and Caistor. The nursery school operates in the mornings, Monday to Thursday.

Bismarck United Church, on the northwest corner of Regional Road 65 and Highway 20, has been in existence since 1838. Fifty-one (51) families belong to the church and come from a 15 km radius, including St. Ann's, Bismarck, Caistor, Wellandport and Smithville. The church is used primarily on Sundays with some evening meetings during the week. Future plans include an addition to the church hall which should permit greater community use of the church.

The northeast corner of Silverdale Road and Sixteen Road is the site of Silverdale United Church. The 122 year-old building is used for Sunday services only; Silverdale Community Centre is used by the congregation for activities such as dinners and receptions. The congregation holds joint services with Tintern United Church, with services being held every other Sunday at Silverdale United. Church members come from the area between 4th Concession Road (south of Silverdale) and Tintern (in the Town of Lincoln).

Emmanuel United Church is located on Regional Road 63 in Wellandport. The century old church has approximately 155 members who come from Wellandport, Low Banks, Welland, Wainfleet and Dunnville. In addition to Sunday services and Sunday school, the church is used an average of two evenings a week.

Bethel Community Church is situated on the southeast corner of Elcho Road and Gee Road. An average of 12-15 people attend the church services. The members are drawn primarily from a 3 to 5 km radius around the church. In addition to Sunday use, the church is used regularly on Wednesday evenings, and other evenings on occasion.

Boyle Brethren in Christ Church is located on the northwest corner of Boyle Road and Vaughan Road. The church congregation has links with the original Tunker Congregation that came from Pennsylvania to the area almost 200 years ago. The 100 members come from a 16 km area around the church. The building is used throughout the week during the daytime and evening for church-related activities and infrequently for other activities such as weddings.

St. Ann's Community Church is located on Regional Road 69 in St. Ann's. The church is used on Sundays, and evenings during the week. Average attendance is 200 people in total for the two Sunday services; evening meeting attendance is approximately 20-30 people. Church members come from Wellandport and St. Ann's as well as Grimsby, St. Catharines, Vineland and Beamsville. Associated with the church is St. Ann's Cemetery; the oldest monument is dated 1797.

Riverside Christian Reformed Church of Wellandport is located in Wainfleet, just outside of Wellandport on the south side of the Welland River. The Church's 500 members live primarily within an 8 km radius of the church and are mainly from the Dutch community. Average attendance at the services is 400-450 people. The church is used 6 evenings during the week in addition to Sunday use; the nearby Christian Reformed School uses the church for a class every day.

The Wellandport Branch of the West Lincoln Public Library is located on Regional Road 63 in Wellandport. The library is open for various hours on Tuesdays, Thursdays and Saturdays. The Branch has 750 members, although some of these are families; thus the actual membership is likely higher. Library users live in Wellandport and the surrounding area that comprises Ward 2 (the former Gainsborough Township) of West Lincoln. In the future it is hoped that the library will move into the Wellandport Community Centre so that more services can be offered to its members.

Gainsborough Centennial Hall is located on the southeast corner of Regional Road 27 and Vaughan Road. The hall is used for meetings by a number of groups including the Milk Board, Junior Farmers and Ministry of Agriculture, in addition to other community and private functions. The hall is used approximately 5-6 times a month.

The Wellandport Community Centre and Park is located on Regional Road 63 in Wellandport. The Centre includes a large hall, illuminated baseball field and pony track. The hall is used for private affairs such as weddings, dinners, fund-raisers and dances and by the agricultural community for crop displays. The hall is used year-round; April to November for an average of 4 days a week and the remaining time, 2 days a week.

The baseball field is used 4 nights a week for organized games. The activities draw people from Wellandport and Smithville as well as from St. Catharines, Welland, Fenwick and Dunnville.

The Oddfellows Temple is on Regional Road 63 in Wellandport. The hall is used alternate Wednesdays and Thursdays and is rented out occasionally. Users generally live within a 13 km radius of the facility. The lodge holds an annual fish fry, which attracts approximately 800 people, and special events twice a year, attracting 75-80 people.

Dufferin Masonic Lodge is located on Regional Road 63 in Wellandport. The Lodge meets once a month except in July and August and is used as a polling station during elections.

Gainsborough Conservation Area, located to the east of the site near the northwest corner of Highway 20 and Regional Road 24, is primarily a forest and wildlife area and central workshop (i.e. equipment and maintenance yard) for the Niagara Region Conservation Authority. No formal public recreation programs or facilities exist but the area is open to anyone who wishes to use the unmarked trails. Estimates of the number of users are not available.

Riverview Golf and Country Club is an 18-hole golf course, located on Regional Road 24 at the Welland River. The golf course has 400 members, with approximately 100 users daily in season. Some cross-country skiers use the facility in the winter. Members are drawn from Welland, Pelham, St. Catharines and Port Colborne; non-members come from the local area or are tourists from Niagara Falls.

The Niagara Region Sportsmens Gun Club is located on 4th Concession Road, approximately 1.5 km northwest of the preferred site. The property is used by members for shooting practice as well as other organizations including the Ontario Provincial Police. The Club offers organized events including shoots approximately every two weeks with informal events each weekend during the summer. The Club has 127 members; an average of 6-10 use the Club facilities on weekdays and 30-45 on weekends. Club members come mainly from the Niagara Peninsula, a few from Hamilton and Mississauga.

The Silverdale Gun Club is located east of the Niagara Regional Sportsmens Gun Club, on 4th Concession Road. The Club has the largest range in Southern Ontario and is host to a number of Provincial Championships. Fall is the busiest time for the facility; at the peak time of use, 3,000 people use the facility over a two week period. The Club is open year-round and is available for use by members 7 days a week, and weekends for the public. In addition to Club members and the general public, the local militia and Boy Scouts use the Gun Club's facilities. Club users camp on the property; 150 campsites are available but no services are provided.

The Silverdale Community Centre is located at the intersection of Silverdale Road and Sixteen Road, approximately 3.5 km north of the site. The Centre is used infrequently by the community for special events and meetings, and holds 60-70 people. Larger events are held elsewhere, for instance in the Wellandport Community Centre.

Four (4) cemeteries are located within the local community. These include the Lane Cemetery, on the north side of Twenty Road (Regional Road 69) between Silverdale and Hodgkins Sideroads; Hitchcock Cemetery, at the corner of Regional Road 69 and Beamsville Road; St. Ann's Cemetery, associated with St. Ann's Community Church; and Bismarck Cemetery, located at Bismarck United Church. The Lane Cemetery, Hitchcock Cemetery and St. Ann's Cemetery were established approximately 200 years ago.

6.3.3 SOCIAL STRUCTURE AND LIFESTYLE

Social structure refers to the pattern of organization or interrelations of individuals and groups in the local community as influenced by the community's general character. A community's socio-demographic composition helps determine its structure; for example, ethnicity, age composition, household characteristics, and occupations affect the social structure of a community. These characteristics have been discussed in

Section 6.3.1 and are reviewed briefly in this section as they provide a basis upon which to document social structure. In this discussion, the major groups that comprise the local community are identified.

Social structure may affect lifestyle and vice versa. "Lifestyle" is the term used to describe one's way of life or the distinct way in which an individual or group of individuals go about their daily activities. "Way of life" originates from ethnic differences, social class and cultural processes (e.g., values and goals, family life cycle).

Lifestyle will vary from individual to individual; an individual's unique experiences in life, talents and personality help form his/her way of life. However, within a community, members share common elements in their lifestyles which can be used to describe broad categories or types of lifestyles. The following discussion focusses on the elements that best characterize the major lifestyles of the residents in the local community. The discussion concentrates on those aspects that have a bearing on the social assessment and does not attempt to document in detail the lifestyles of the local residents.

Because of the interrelationship between social structure and lifestyle, these considerations are discussed together. Social structure can be identified through the major or distinct groups within a community. The groups within the local community are documented through a brief review of the socio-demographic characteristics of the residents and community. The discussion of lifestyle specifically addresses community involvement, use of property, relationships with friends and neighbours, and ancestral ties to the community and property. Attributes of the community valued by the residents provides additional insight into their lifestyle.

There are two other considerations discussed in this section, that while only indirectly related to lifestyle and social structure, provide important baseline information for the social assessment; these are community satisfaction and use of local facilities.

The socio-demographic characteristics of the local community provide a starting point in the documentation of lifestyle and social structure. As described in Section 6.3.1, the area is rural-agricultural; there is a relatively high proportion of the population engaged in farming and related occupations. The land uses in the local community are almost entirely agricultural and rural. The large household size, high proportion of home ownership and longer lengths of residency are typical of rural communities.

Two main ethnic groups comprise the local community; much of the population is of British descent but a significant segment of the population is of Dutch ancestry. The majority of residents are Protestant with a significant proportion attending the Christian Reformed churches in the area. Most of these residents are part of the Dutch community.

A segment of the population has long ties with the community, having ancestors who were among the early settlers in the area. Some residents live on property or farms that have been handed down from generation to generation. In contrast, a number of new residents have moved into the area in recent years, many coming from nearby urban areas seeking a rural lifestyle. Many of these residents maintain jobs in urban centres, commuting daily from the local community.

The Dutch residents are relatively new in the community, having first arrived in the area following World War II. Many are farmers, primarily dairy farmers; others are in different businesses. This group has been characterized by community leaders as being closely knit, family-oriented, and distinct from the rest of the community by different values, religious beliefs and ethics. Many members of the Dutch community support their own school system and churches. But the members of this sub-community mix well with the community as a whole and are well-respected for the contributions they have made.

A predominant characteristic of the area is the importance of farm households. The farm population tends to include more long-term residents than the non-farm population. Higher proportions of farm residents have lived at their current address and in West Lincoln for more than 20 years (see Table 6.6).[1] A significant proportion (28%) of the farm households participating in the survey reported that their property had been previously owned by family members;[2] 24% of these properties had been in the family for 91-200 years. A number of farm households are farming lands that were original land grants given to their ancestors when the area was first settled.

Other farm households, while not farming ancestral land, have ancestors who were among the early settlers. Thirty percent (30%) of the farm respondents have ancestors who lived in West Lincoln.[3] A majority of these respondents (68%) reported that their ancestors had been living in West Lincoln for 81 to 200 years.

While some farm households have ancestors who lived in West Lincoln, many have relatives currently living in the Township (59%).[4] There are a number of extended families living in the community, and in some cases several generations of a family are involved in farming. Farm properties are still passed down from generation to generation. A number of residents have expressed the hope that their children and grandchildren would take over the farm operation; other residents have expressed aspirations to do so. Key contacts and residents attending kitchen table meetings reported that farm children, upon completing their education, generally remain in the area to work on, or take over, the family farm.

Generally, a farming operation is a family business involving most members of the household.[5] Farm residents have pointed out that farming is not solely a business but also a way of life.

In recent years, the farmers within the local community have experienced some of the pressures and problems associated with low produce prices, high interest rates and high production costs. It is not unusual to find farm operators who also work off

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[1] Questions 1 and 2.

[2] Question 5.

[3] Question 6.

[4] Question 69.

[5] Ninety-nine percent of farms in Canada, as of 1986, are family operations. Statistics Canada "Infomat - A Weekly Review". Friday, June 5, 1987.

TABLE 6.6
LENGTH OF RESIDENCE AT CURRENT ADDRESS

Number of Years	Farm Respondents #	Farm Respondents %	Non-Farm Respondents #	Non-Farm Respondents %
less than 1 year	2	2.7	8	4.6
1-2 years	6	8.0	30	17.3
3-5 years	8	10.7	21	12.1
6-10 years	12	16.0	30	17.3
11-15 years	9	12.0	28	16.2
16-20 years	5	6.7	15	8.7
more than 20 years	23	30.7	32	18.5
Always lived there	10	13.3	9	5.2
Total Respondents	75		173	

Source: IER, Phase 4B, Resident Interviews, 1986. Question 1.

the farm and/or use their house or property for other businesses to supplement their income. Almost all of the farm households (96%) reported using their house or property for other businesses. Forty-five percent (45%) of the principal farm operators living in the study area work off the farm during the course of the year.[1]

Over the years, with mechanization and other changes in agriculture, farms have become larger and the farm population has diminished (Institute of Environmental Research 1985; Township of West Lincoln 1979). The farming community is perhaps not as closely knit as it may have been when the area was first settled. However, this could be said of any community today, either urban and rural. While barn raisings and work bees are not common events, farm residents are ready to assist one another if necessary. Thirty-one percent (31%) of those interviewed indicated that they help their neighbours with farm-related activities on a weekly basis and another 23% on a monthly basis.[2]

Several farm organizations are active in the area. Marketing Boards and the Ministry of Agriculture and Food meet in the Township and children still belong to Junior Farmers and the 4-H Club. The Wellandport Community Centre is used for produce displays; the Smithville Fair, held annually at the end of August, reflects the agricultural nature of the community.

The non-farm population is comprised of residents who work in West Lincoln and those who commute to work in urban centres such as St. Catharines, Welland and Hamilton. While there are many long-time non-farm residents in the community, the more recent residents tend to be non-farmers rather than farmers. Thirty-four percent (34%) of the non-farm survey respondents have lived at their current address for 5 years or less as compared to 21% of the farm respondents.[3] Nineteen percent (19%) of the non-farm respondents have lived in West Lincoln for 5 years or less as compared to 17% of farm respondents (see Table 6.6).[4]

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1. 'Principal farm operators' are those individuals responsible for day-to-day decisions on the farm; data from Ecologistics Ltd.
2. Question 70.
3. Question 1.
4. Question 2.

Long-time residents often have ancestors who lived in West Lincoln; 38% of the interviewed non-farm residents reported having ancestors who lived in the Township, and 33% of those household's families have lived there for 81-200 years.[1] A number of non-farm residents live on property that had previously been in the family (28%), 22% of which have been in the family for 81-200 years.[2]

Many of the non-farm residents have relatives currently living in West Lincoln (59%).[3] However, during the public consultation process, residents indicated that children from non-farm households tend to leave the area after completing their education in order to obtain employment.

The more recent non-farm residents have moved to the area seeking a rural lifestyle. They see the local community as offering them amenities not available in urban centres. At the same time, the area's central location allows them to take advantage of the attributes available only in nearby urban centres and permits them to commute to work. Other non-farm residents have moved to the area for economic reasons; lower home and property prices make accommodation more affordable than in urban centres.

Over one-quarter (27%) of the non-farm residents use their property or home for business.[4] Many of these are farm-related (37%) or service-oriented (30%).

Residents' use of their property for outdoor activities provides insight into their lifestyle. Most use their property for activities such as gardening, entertaining friends and relatives, family barbeques and children's activities (see Table 6.7).[5] A number of residents also use their property for activities such as swimming, snowmobiling, hunting, cross-country skiing and fishing. The larger properties provide residents with the opportunity to participate in such activities on their own properties without having to go elsewhere as most urban residents must do.

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[1] Question 6.
[2] Question 5.
[3] Question 69.
[4] Question 7.
[5] Question 52.

TABLE 6.7
RESIDENT'S USE OF PROPERTY FOR OUTDOOR SOCIAL AND RECREATIONAL ACTIVITIES

Activity	Number of Respondents	Percentage of Actual Respondents
Gardening	208	87
Entertaining Friends and Relatives	206	86
Family Barbecues	194	81
Children's Activities	176	74
Snowmobiling and RV activities	92	39
Hunting	76	32
Cross-country Skiing	71	30
Fishing	63	26
Swimming	61	26
Other Sports	18	8
Leisure/Relaxation	10	4
Other	8	3
Total Respondents	239	

Source: IER, Phase 4B, Resident Interviews, 1986. Question 52.

A majority of respondents have close friends living in West Lincoln (67%); 39% of the interviewed households reported three close friends living in the Township and 28% one or two close friends.[1] Approximately one-third of the households do not have close friends living in West Lincoln. A number of these residents are likely newer residents to the area.

Most residents of the local community entertain their neighbours or are entertained by their neighbours fairly frequently. Discussions with community leaders indicated that residents are more likely to visit with neighbours than drive to an urban centre for entertainment. Fifty-four percent (54%) of the responding households entertain or are entertained daily or weekly; another 18%, monthly.[2]

Residents assist one another often in a number of ways including borrowing tools or food, watching each other's homes, and helping with house repairs and chores. Forty-five percent (45%) of the responding households do so on a daily or weekly basis; another 24% assist one another at least monthly.[3] Only 10% reported never providing assistance to, or being assisted by, neighbours.

The resident interview results provide information on residents' involvement in community groups and associations; Table 6.8 summarizes this information. Over one-half (122 or 52%) of the responding households have at least one household member involved in a community group or association.[4] Residents are primarily members of church groups, social clubs and sports and recreation clubs. Residents participate to a lesser extent in agricultural groups and service clubs. About half of the households reporting a member involved in community groups have household members on the executive of these groups.

Almost one-half (41%) of the households responding to the resident interviews have children attending school.[5] Table 6.9 reports the schools attended by children in households responding to the Phase 4B Resident Interviews. The majority of the children of elementary school age (56%) attend Gainsborough Central Elementary

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1. Question 68.
2. Question 70.
3. Question 71.
4. Question 72.
5. Question 73.

TABLE 6.8
COMMUNITY GROUP MEMBERSHIP

Type of Community Group	Households With Members in Community Groups		Households With Members on Executives	
	Number of Responses	Percentage of Actual Respondents	Number of Responses	Percentage of Actual Respondents
Church Group	100	85	38	32
Sports and Recreation Club	62	53	15	13
Social Club	30	25	10	8
Service Club	23	19	8	7
Agricultural Group	21	18	6	5
Cultural Group	7	6	2	2
Naturalist/Environmental Group	6	5	3	3
Political Organization	5	4	4	3
School Group	5	4	5	4
Other Leisure Club	4	3	2	2
Unstructured Volunteer	3	2	-	-
Ratepayer/Community Group	1	1	1	1
Charitable Organization	1	1	1	1
Other	1	1	1	1
Total Respondents	118		61	

Source: IER, Phase 4B, Resident Interviews, 1986. Question 72.

Notes:
1. The percentage is calculated based on the total repondents reporting household members who belonged to community groups. (118)

TABLE 6.9
SCHOOLS ATTENDED BY CHILDREN IN RESPONDING HOUSEHOLDS

Elementary School	Number Of Households	Percentage of Households
Gainsborough Central Elementary School, Bismarck	40	56.3
Wellandport Christian School, Wellandport	17	24.0
John Calvin School, Smithville	6	8.5
St. Ann's Separate School, St. Catharines	3	4.2
St. Martin's Separate School, Smithville	1	1.4
College Street Elementary School, Smithville	1	1.4
Other (outside West Lincoln)[1]	3	4.2
	71	100.0
Secondary School		
Beamsville Secondary School, Beamsville	16	41.0
South Lincoln High School, Smithville	12	30.8
Smithville District Christian High School, Smithville	6	15.4
Other (outside West Lincoln)[1]	5	12.8
	39	100.0

Source: IER, Phase 4B, Resident Interviews, 1986. Question 74.

Notes:

1. Another 8 households responding to the resident interviews were not specific in their responses with respect to the school (s) attended by their children.

School; the school's district boundaries coincide with those of the former Gainsborough Township. One-third of the households with children send their children to one of two schools associated with the Christian Reformed Church. Most attend the Wellandport Christian School, located just south of Wellandport; the others attend John Calvin School in Smithville. Children attending these two schools are primarily from the Dutch community.

Most high school students in the local community attend either Beamsville Secondary School in Beamsville, or South Lincoln High School in Smithville. A smaller percentage attend Smithville District Christian High School, and again, most are from the Dutch community.

The majority of respondents attend church either regularly or occasionally (80%).[1] Over one-quarter of the respondents who do so attend churches located within the local community: Bismarck United, Silverdale United, Emmanuel United, Bethel Community Church, Boyle Brethren in Christ Church and St. Ann's Community Church (see Table 6.10). Approximately one-quarter of the responding households attend churches in Smithville. A significant proportion attend Riverside Christian Reformed Church in Wainfleet, just south of Wellandport. A large number of respondents (37%), however, attend churches in Lincoln or Pelham or elsewhere in the Niagara Region. Many of these are probably newer residents who have maintained affiliation with their church in their former place of residence.

The services and facilities providing the residents' daily needs are generally located in Smithville and in the hamlets. In the absence of corner stores, neighbourhood community centres and public transit, there is a heavy reliance on the automobile. Almost all school children are bussed to school.[2] As well, residents must travel outside West Lincoln to large urban centres for many services, facilities and entertainment. The additional travelling is accepted by residents in exchange for the rural lifestyle and attributes the area offers.

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[1] Question 75.

[2] Ninety-nine percent of the students attending Gainsborough Central Elementary School are bussed. The local students attending South Lincoln High School and Beamsville Secondary School are bussed also.

TABLE 6.10
CHURCHES ATTENDED BY RESPONDING HOUSEHOLDS

Church and Location	Number of Responding Households	Percentage of Responding Households
Local Community	52	28.1
Bismarck United Church	9	4.8
Silverdale United Church	7	3.8
Emmanuel United Church	12	6.5
Bethel Community Church	2	1.1
Boyle Brethren in Christ Church	5	2.7
St. Ann's Community Church	17	9.2
Other West Lincoln Churches	65	35.1
Riverside Christian Reformed Church	22	11.9
Smithville Churches	43	23.2
Niagara Region Churches	57	30.8
Pelham Churches	19	10.3
Lincoln Churches	18	9.7
Other Niagara Region Churches	20	10.8
Other	15	8.1
Total Number of Responding Households	185[1]	

Source: IER, Phase 4B, Resident Interviews, 1986. Question 75.

Notes:

1. Some respondents provided the name of more than one church attended by household members, and consequently the number of households add up to more than the number of responding households.

The resident interviews provided information on the characteristics most liked and valued in the community. These are reported in Tables 6.11 and 6.12. When asked in an open-ended question about the three most important characteristics they liked in the area, the following responses were given: way of life/country lifestyle/small town atmosphere, peace and quiet, accessibiity to work and school, clean air and environment, friendly people, open space, and accessibility to friends and relatives (Table 6.11).[1] When provided with a list of characteristics and asked which they liked most about the area, answers varied somewhat. The responses given most often include peace and quiet, clean air, open space, friendly people, absence of industrial development, good place to raise children, and way of life (Table 6.12).[2] These feelings were generally reflected in formal and informal discussions with residents and community leaders. Despite the fact that most children must be bussed to school and many residents commute to urban centres outside West Lincoln, the area is seen as accessible to work and school (see Table 6.11). Because of the area's central location in the Niagara Peninsula, there are several urban centres within a 30 minute drive; thus a broad range of services and places of employment are within easy commuting distance.

Few problems with the community were identified by residents (see Table 6.13).[3] The problem most often mentioned was water quality and quantity; many households must rely on cisterns for their water supply and, when necessary, truck in water. Residents also see themselves as having little political influence with regard to decisions that affect their community. This is demonstrated by the fact that 35% of the respondents feel that they do not have enough population or political influence. From discussions with residents it appears that this belief can be attributed in part to their feeling that the OWMC facility is being forced upon them. Other problems identified include traffic and odours. A significant proportion of the residents (21%) indicated that there are no problems in the area.

It is clear from the residents' responses that they are generally satisfied with the local community as a place to live, as indicated in Table 6.14. When asked whether they were satisfied with the local community, almost all who were interviewed reported

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[1] Question 58.

[2] Question 59.

[3] Question 60.

TABLE 6.11
MOST IMPORTANT CHARACTERISTICS LIKED ABOUT AREA[1]

Characteristics	Number of Responses	Percentage of Actual Respondents
Way of life/country lifestyle/small town atmosphere	108	46
Peace and quiet	104	44
Clean air/environment	75	32
Accessibility to work, school, etc.	74	31
Friendly people	46	20
Open space	37	16
Accessibility to friends/relatives	23	10
Business opportunities/good farming	21	9
Good place to raise children	20	9
It's home	19	8
Privacy	17	7
Absence of industrial development	16	7
Recreational and leisure opportunities	16	7
Close to nature	14	6
Attractive area/aesthetic value	14	6
Cooperation among neighbours	10	4
Good climate	10	4
Large properties	9	4
Traffic/roads	9	4
Safety	7	3
Pace of life	5	2
Value of the community	5	2
Economically feasible/low cost of housing	5	2
Quality of life	3	1
History	2	1
Other	6	3
Total Respondents	235	

Source: IER, Phase 4B, Resident Interviews, 1986

Notes:

1. Residents were asked an open-ended question: 'What were the three most important characteristics you liked about this area?' (Question 58).

TABLE 6.12
CHARACTERISTICS LIKED ABOUT AREA[1]

Characteristics	Number of Responses	Percentage of Actual Respondents
Peace and quiet	219	90
Clean air	218	90
Open space	217	90
Friendly people	208	86
Absence of industrial development	207	86
Good place to raise children	204	84
Way of life	197	81
Cooperation among neighbours	195	80
Pace of life	182	75
Attractive area	181	75
Safety	180	74
Large properties	174	72
Accessibility to work, school, etc.	170	70
Accessibility to friends, relatives	158	65
Traffic	158	65
Quality of schools	155	64
Values of community	150	62
Total Respondents	242	

Source: IER, Phase 4B, Resident Interviews, 1986.

Note:

1. Residents were shown a list of characteristics and asked 'Which of these characteristics, if any, do you like most about this area?' (Question 59).

TABLE 6.13
CHARACTERISTICS SEEN AS PROBLEMS IN THE AREA

Characteristic	Number of Responses	Percent of Actual Respondents
Lack of political clout	75	35
Water quality/quantity	67	31
No problems	44	21
Odours	37	17
Traffic	35	16
Lack of population	21	10
Accessibility	20	9
Lack of upkeep of neighbouring properties	17	8
Dust	16	7
Noise	16	7
Inadequate services	4	2
Neighbours	3	1
Snowmobiles/RVs	1	0.5
Lack of utilities	1	0.5
Lack of government services	1	0.5
Language barrier	1	0.5
Increasing housing development	1	0.5
Safety on roads	1	0.5
Other	4	2
Total Respondents	214	

Source: IER, Phase 4B, Resident Interviews, 1986. Question 60.

TABLE 6.14
SATISFACTION WITH COMMUNITY AS A PLACE TO LIVE

Level of Satisfaction	Number of Respondents	Percent of Actual Respondents
Very Satisfied	197	81
Satisfied	36	15
Neither Satisfied/Dissatisfied	9	4
Dissatisfied	0	0
Very Dissatisfied	0	0
Total Respondents	242	100.0

Source: IER, Phase 4B, Resident Interviews, 1986. Question 57.

satisfaction (233 or 96% of respondents), with most (197 or 81% of respondents) indicating that they are very satisfied.[1] None of those interviewed reported dissatisfaction with the area. Furthermore, most residents, if required to move from their current address, would choose to remain in West Lincoln Township (177 or 75% of respondents).[2]

Residents are generally satisfied with the services and facilities provided by the Township and Niagara Region (see Table 6.15). High ratings were given to the quality of schools, medical and health facilities, shopping facilities, and Regional road maintenance.[3] Lower, but still favourable ratings (that is, the majority rating was at least 'adequate') were given to fire protection, recreational facilities and Township road maintenance.

6.4 CHARACTERISTICS OF ON-SITE RESIDENTS

The OWMC preferred site is located on Lots 17 and 18, Concession 3, in West Lincoln Township. Highway 20, Schram Road and Vaughan Road form the site's boundaries. Figure 6.1 (above) provides the location of the site. Characteristics of the residents on-site, their use of property and links with the community are described below.[4]

Four properties are contained on-site. Residential dwellings are located on three of these properties and are home to 5 residents. All five residents are adults; no children under the age of 18 years live on the site. Two of the households are farm households, although one is semi-retired. The residents on-site are long-time residents of West Lincoln, having lived in the Township for more than 20 years or all of their lives. Ancestors of one family have lived in the Township for approximately 200 years.[5]

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1. Question 57.
2. Question 63.
3. Question 61.
4. One (1) on-site household chose not to participate in the Phase 4B Resident Interviews. Phase 4A survey data has been used to identify household characteristics.
5. Other information on the residents' characteristics provided through the resident interviews are not provided here. The small number of residents on-site does not permit the reporting of these data without potential loss of confidentiality.

TABLE 6.15
RESIDENT RATINGS OF MUNICIPAL AND REGIONAL SERVICES

Services/Facilities	Very Good and Good Ratings Number of Respondents[1]	Percent of Respondents
Quality of Schools	177	74
Shopping Facilities for Daily Needs	164	69
Medical and Health Facilities	148	62
Maintenance of Regional Roads	134	56
Police Protection	107	45
Fire Protection	108	45
Recreational Facilities and Services	103	43
Maintenance of Township Roads	92	38

Source: IER, Phase 4B, Resident Interviews, 1986. Question 61.
Notes:
1. Total respondents rating each service or facility varies between 233 and 239.

6.5 ACCESS ROUTE CHARACTERISTICS

6.5.1 INTRODUCTION

The purpose of this section is to describe the characteristics of the residents and communities, and community and recreation features located along the access route. Included is a discussion of the characteristics of the population adjacent to the access route, their use of the roadway area and concerns regarding the current volume of traffic. The discussion also covers the characteristics of, and land uses in, the communities through which the access route passes and the characteristics and use of community and recreation features.

The OWMC preferred access route runs south from the Queen Elizabeth Way along Regional Road 24 (Victoria Avenue in Vineland) to Highway 20, west on Highway 20 to the eastern limit of the preferred site at Schram Road and south on Schram Road for approximately 80 metres to the site entrance. The access route is shown in Figure 6.4.

The discussion that follows is based on results of the resident surveys,[1] meetings with representatives of community and recreation features, discussions with local residents,[2] a field survey undertaken during Phase 4A and municipal land use and official plan documents.

6.5.2 DESCRIPTION OF THE ACCESS ROUTE

The access route passes through urban and rural-agricultural areas of the Town of Lincoln and rural-agricultural areas of the Town of Pelham and Township of West Lincoln. Upon leaving the QEW, the access route passes through the small residential community of Vineland Station, a number of orchards and vineyards, and the community of Vineland (population 1,426).[3] Vineland is primarily a residential area

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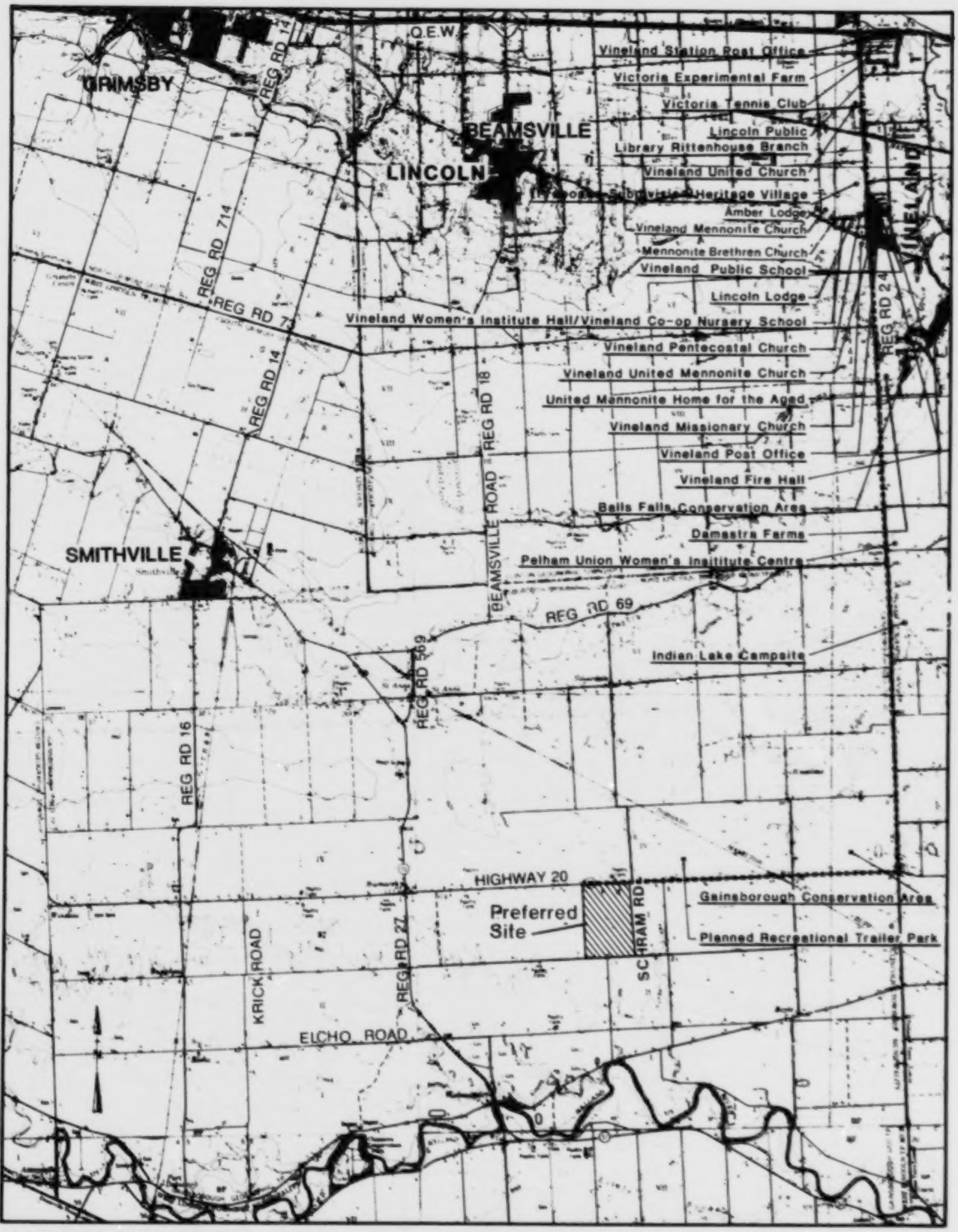
[1] Two resident surveys relating to the access route were undertaken in Phase 4B. Residents adjacent to the access route received a self-administered questionnaire. Those residents living adjacent to the access route and within the site study area that participated in the resident interviews were asked a series of questions relating to the access route during the course of the interview. A discussion of the access route drop-off survey and resident interviews is provided in Chapter 4, 'Data Collection'. Any references to survey data in this section are to the drop-off survey unless otherwise noted.

[2] These discussions were in the form of 'Kitchen Table' and 'One-on-One' meetings, Key Contact interviews, and conversations with residents attending OWMC Regional Meetings and Drop-In Centres.

[3] Niagara Region Planning Office, 1985 value.


Q.E.W.
GRIMSBY
REG RD 14
BEAMSVILLE
LINCOLN
Vineland Station Post Office
Victoria Experimental Farm
Victoria Tennis Club
Lincoln Public
Library Rittenhouse Branch
Vineland United Church
[illegible] Subdivision/Heritage Village
Amber Lodge
Vineland Mennonite Church
Mennonite Brethren Church
Vineland Public School
Lincoln Lodge
Vineland Women's Institute Hall/Vineland Co-op Nursery School
Vineland Pentecostal Church
Vineland United Mennonite Church
United Mennonite Home for the Aged
Vineland Missionary Church
Vineland Post Office
Vineland Fire Hall
Balls Falls Conservation Area
Damstra Farms
Pelham Union Women's Institute Centre
Indian Lake Campsite
Gainsborough Conservation Area
Planned Recreational Trailer Park
VINELAND
REG RD 24
REG RD 714
REG RD 73
REG RD 14
REG RD 18
BEAMSVILLE ROAD
SMITHVILLE
Smithville
REG RD 69
REG RD 569
REG RD 16
HIGHWAY 20
Preferred Site
SCHRAM RD
KRICK ROAD
REG RD 27
ELCHO ROAD

OWMC Ontario Waste Management Corporation

Consultant ier

COMMUNITY AND RECREATION FEATURES
PREFERRED ACCESS ROUTE

MARCH 1988

1 0 1 kilometers

FIGURE 6.4

and service centre for the surrounding rural-agricultural areas. Land uses abutting the access route are a mix of residential dwellings and community and recreation features, as well as some commercial development. As the access route leaves Vineland, it rises steeply up the Niagara Escarpment and enters an area of mixed agriculture (crops and livestock) with some fruit operations (Ecologistics Ltd. 1988), rural residential development, some community and recreation features and limited commercial and industrial uses.

Regional Road 24 and Highway 20 are well used roadways, shared by the residents and abutting businesses as well as traffic passing through the area.

The volume of traffic carried on the access route decreases substantially between the QEW and the site entrance. The section of Regional Road 24 between the QEW and Ninth Avenue handles almost two to three times the volume of traffic (4990-8450 AADT[1]) as compared to Highway 20 between Regional Road 24 and the preferred site (3420 AADT). A substantial proportion of the traffic is truck traffic: 19-22% on Regional Road 24 and 16% on Highway 20. In comparison, Schram Road has a low volume of traffic, with an annual average daily volume of 120 vehicles (primarily local traffic, of which 3% are trucks) (M.M. Dillon Ltd. 1987).

Regional Road 24 and Highway 20 are two lanes wide with the exception of the section between the QEW and Regional Road 81 in Vineland. This section of Regional Road 24 was widened to 4 lanes in 1970. With the exception of the Vineland section of the access route, the roadway shoulders are unpaved.

6.5.3 POPULATION AND HOUSEHOLD CHARACTERISTICS

A total of 231 dwellings are located adjacent to the access route. Within these dwellings reside an estimated 778 residents.[2] An additional 359 dwellings are located within 500 metres of both sides of the access route, with an estimated population of 1,133. Thus, a total of 590 dwellings and an estimated 1,911 residents are located within 0 to 500 metres of the access route.

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[1] AADT: Average Annual Daily Traffic (2 way).

[2] It has been estimated that 104 of these residents live within the site study area as well.

One hundred and thirty-nine (139) households adjacent to the access route responded to the drop-off survey. An additional 14 households adjacent to the access route but also within the site study area were asked questions regarding the access route during resident interviews.

The age profile of the responding households indicates that 7.4% of the population is of pre-school age (0-4 years) and 19.9% is of school age (5-19 years).[1] Fourteen percent (14%) of the population is aged 65 years or older. Adults (20-64 years) comprise the remainder of the population (58.7%). Table 6.16 describes the age structure for Lincoln, Pelham, Niagara Region and Ontario relative to that for Vineland. It should be noted that the population structure determined from interview results is different from that taken from census data. In either case, the data indicate that Vineland has a high proportion of seniors in its population.

6.5.4 RESIDENTS' USE OF THE ROADWAY

Residents living adjacent to the access route use the roadway[2] for a number of activities.[3] Table 6.17 provides the activities identified by residents. A majority of residents reported that they use the roadway area for walking (84% for walking for pleasure, 74% for walking to a friend's house, and 53% for walking to shopping facilities). Twenty-eight percent (28%) of the households reported that their children use the roadway to walk to school and 34% of the households have children who use the roadway to wait for the school bus. The roadway area is used by 63% of the responding households for bicycling, 21% of the households for jogging and 12% for other walking activities.

6.5.5 RESIDENTS' CURRENT CONCERNS

Residents responding to the drop-off survey reported a number of concerns relating the current volume of traffic on the access route. Their responses are shown in Table 6.18. Of the responding households, almost all indicated trucks and cars exceeding the speed limit.[4] Truck accidents resulting in spills, icy road conditions and noise were noted as very important or important concerns.

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[1] Question 10.

[2] Roadway is defined as the sidewalk, shoulder or road.

[3] Phase 4B Access Route Drop-Off and Survey, Question 3a.

[4] Question 1.

TABLE 6.16
TOTAL POPULATION AND AGE STRUCTURE, VINELAND, PELHAM, LINCOLN AND NIAGARA REGION

(Percent)

Age Group	Vineland		Lincoln[2]	Pelham[2]	Niagara Region[2]	Ontario[2]
0-4 years	7.4[1]	5.8[2]	6.3	6.3	6.4	6.9
5-19 years	19.9[1]	26.0[2]	26.3	27.2	25.0	24.4
20-64 years	58.7[1]	53.3[2]	53.9	57.0	57.1	58.6
65+ years	14.0[1]	15.0[2]	13.6	9.5	11.4	10.1

Notes:
1. IER, Phase 4B, Access Route Drop-Off Survey, 1986. Question 10.
2. Statistics Canada, 1981 Census

TABLE 6.17
RESIDENTS REPORTED USE OF THE ROADWAY AREA

Activity	Number of Responses	Percentage of Actual Respondents
Walking for pleasure	127	83.6
Walking to a friend's house	112	73.7
Bicycle riding	96	63.2
Walking to shopping	81	53.3
Waiting for school bus	52	34.2
Walking to school	42	27.6
Jogging	32	21.1
Snowmobiling	9	5.9
Horseback riding	4	2.6
Other (includes other walking and picking up mail)	28	18.4
Don't use	7	4.6
Total Responses	590	
Total Respondents	152	

Sources: IER, Phase 4B, Access Route Drop-Off Survey, 1986 (Question 3a) and IER, Phase 4B, Resident Interviews, 1986 (Question 4, Addendum 1)

TABLE 6.18
CONCERNS REGARDING EXISTING TRAFFIC ON REGIONAL ROAD 24 - ACCESS ROUTE DROP-OFF SURVEY

Concern	Number of Respondents[1]	Percent of Actual Respondents[1]
Trucks exceeding speed limit	136	97
Cars exceeding speed limit	136	97
Icy road conditions	120	93
Truck accidents resulting in spills	124	92
Noise from traffic	129	92
Safety of cyclists	119	89
Safety of pedestrians using road shoulder	120	87
Conflicts between school buses and other vehicles	115	87
Difficult access to private driveways due to traffic	120	85
Structural damage due to truck vibrations	107	79
Dust from traffic	107	78
Lack of pedestrian crossings	94	72
Poorly marked pedestrian crossings	83	68
Inadequate road maintenance	82	64
Speed limit too high	80	62
Conflicts between farm machinery and other vehicles	66	60
Safety of farm animals crossing the road	35	28

Source: IER, Phase 4B, Access Route Drop-Off Survey, 1986. Question 1.
Notes:

1. The responses shown provide the number and percentage of respondents who rated each concern as 'very important' or 'important' concerns.
2. The percentage of actual respondents is calculated on the basis of the total number of respondents rating each particular concern.

Some households along the preferred access route must keep their windows closed in the summer to reduce the noise levels from Regional Road 24. Sunday is the only day on which these people can comfortably use their front yards.[1]

Over three-quarters of those responding identified current concerns about reduced access to private driveways, pedestrian and cyclist safety, dust from traffic and structural damage due to traffic vibration.[2] Several Vineland residents have commented on the recurring cracking of walls in their homes which they attribute to the vibration from the traffic.

Over half of those responding identified the road speed limit as being too high, conflicts between farm machinery, other vehicles and school buses as very important or important concerns. Lack of pedestrian crossings and poorly marked crossings are concerns of over one-half of the responding households, as is inadequate road maintenance. Slightly over one-quarter of the residents indicated the safety of farm animals as a concern. All of these concerns were generally reflected in a number of informal discussions with local residents,[3] and in letters to OWMC from concerned citizens.

6.5.6 COMMUNITY AND RECREATION FEATURES

A total of seventeen (17) community and recreation features are located within 150 metres of the access route. Of these, three (3) are churches (Vineland Pentecostal Church, Vineland Missionary Church and Vineland United Church). Vineland Public School is located on the access route. Balls Falls Conservation Area is situated on Regional Road 24 and Gainsborough Conservation Area on Highway 20. Other community and recreation features adjacent to the access route include: Indian Lake Campground, Pelham Union Women's Institute Centre, Victoria Experimental Farm, Vineland Station Post Office and Vineland Post Office, Damastra Farms (equestrian facility), Victoria Tennis Club, Rittenhouse Branch of the Lincoln Public Library and Lincoln Lodge. A trailer park/campground is proposed for development on Highway 20, to the east of the preferred site. A new retirement community, Heritage Village, has been approved for development in Vineland adjacent to Regional Road 24; it will include recreation and community features. Table 6.19 identifies the community and recreation features noted above and Figure 6.4 provides the location of these features. Appendix B contains detailed information on each of the features. A brief summary of the characteristics and use of these features is provided below.

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[1] March 19, 1987. Kitchen Table Meeting with Vineland residents.

[2] Question 1.

[3] These discussions were in the form of 'Kitchen Table' and 'One-on-One' meetings, key contact interviews, agency contacts and conversations with residents attending OWMC Regional Meetings and Drop-In Centres.

Vineland Public School had 348 students enrolled in junior kindergarten through to Grade 8, as of March, 1987. All the school buses (7) must travel along Regional Road 24 for at least some distance. Sixty-four percent (64%) of the student population is bussed to school.

Vineland United Church, Vineland Pentecostal Church and Vineland Missionary Church have members or attendants ranging from 62 to 300 in number. While these churches are used primarily on Sundays and during the evening, all reported daytime weekday use. Vineland Pentecostal Church offers a children's activity program in the afternoon following school.

Balls Falls Conservation Area is located on the east side of Regional Road 24, 2 km south of Regional Road 81. The Conservation Area is very popular with residents of Niagara Region and is used extensively, drawing an annual attendance of 75,000 to 80,000. Balls Falls is open year-round and includes an historical village, arboretum, museum, archeological site, picnic areas and education field centre. The Niagara Escarpment and Bruce Trail pass through the Conservation Area. Half of the users are children, Balls Falls being a popular destination for school tours. Senior citizen bus tours and special events such as the Thanksgiving weekend are popular also.

Gainsborough Conservation Area, located near the northwest corner of Highway 20 and Regional Road 24, is primarily a forest and wildlife area and central workshop (i.e. equipment and maintenance yard) for the Niagara Region Conservation Authority. No formal public recreation programs or facilities exist but the area is open to members of the public who wish to use unmarked trails. Figures on number of users are not available.

TABLE 6.19
COMMUNITY AND RECREATION FEATURES ALONG PREFERRED ACCESS ROUTE

0-150 Metres from Access Route

Vineland Pentecostal Church
Vineland Missionary Church
Vineland United Church
Vineland Public School
Balls Falls Conservation Area
Gainsborough Conservation Area
Indian Lake Campground
Pelham Union Women's Institute Centre
Victoria Experimental Farm
Vineland Station Post Office
Damastra Farms
Vineland Post Office
Lincoln Lodge
Victoria Tennis Club
Rittenhouse Branch - Lincoln Public Library

Proposed Trailer Park
Heritage Village (under construction)

150-500 Metres from Access Route

Vineland United Mennonite Church
Vineland Fire Hall
United Mennonite Home for the Aged
Vineland Women's Institute Hall
Vineland Co-op Nursery

Victoria Experimental Farm is located at the north end of the access route at the QEW. The farm conducts 50 to 60 formal weekday tours annually for school groups, senior citizen groups and horticultural colleges. An estimated 1,000 to 1,500 people take these tours between May and September. The facility is open to the public and many use it for wedding pictures, particularly on weekends.

Indian Lake Campground is a privately owned facility with approximately 200 campsites as well as recreational facilities and nature trails. The campground operates from May to October. Besides family camping, the campground is used by girl guides, boy scouts and the municipal summer day camp.

The Pelham Union Women's Institute meets in a one-room former schoolhouse owned by the Town of Pelham and located on Regional Road 24 near Regional Road 69. The group holds teas, bazaars, bake sales, picnics and other similar events. Many of their activities take place during the evenings or on weekends but the Institute does hold some day-time activities.

Vineland Station Post Office is open in the morning and afternoon on weekdays, and mornings on Saturday. Approximately 200 persons use the post office daily to pick up and deposit their mail.

Damastra Farms is a privately owned equestrian facility located on the east side of Regional Road 24. The farm offers riding lessons afternoons and evenings during the week, and on Saturday mornings. Facilities include outdoor trails and an indoor riding ring. Over 50% of the users are children. The facility operates year-round and offers show jumping events during the summer.

The Rittenhouse Branch Library is located on 1st Avenue in Vineland Station, to the east of Regional Road 24. The library is open for various hours during the day-time Tuesdays, and Thursdays to Saturdays, evenings only on Mondays and closed Wednesdays and Sundays. An average of 20 people use the library on any given day.

The library also offers a craft program and pre-school programs. Children and teens make up 15% of its users and seniors 50%.

The Victoria Tennis Club is located on the same property as the Rittenhouse Branch Library, in Vineland Station. The Club is open daily 6:00 a.m. to 10:30 p.m., April to October. Junior instruction is offered and the Club is host to matches, tournaments and league play. Of the 200 estimated members, an average of 25 use the facility daily. Over half of the users are adults but a significant proportion are school age children.

Lincoln Lodge is a special care home located on Rittenhouse Road, west of Regional Road 24, in Vineland. The Lodge houses 31 patients from the Hamilton Psychiatric Hospital.

The Vineland Post Office is located on Main Street (Regional Road 81) east of Regional Road 24, and serves approximately 500 people daily.

Heritage Village is a new community under construction to the west of Regional Road 24 in Vineland which, when completed, could house 1,000 to 1,500 people and include a nursing home/senior citizen complex and shopping centre.

In addition to those community and recreation features noted above, five (5) features are located within 500 metres of the access route. These features include: Vineland United Mennonite Church, Vineland Fire Hall, United Mennonite Home for the Aged, Vineland Women's Institute Hall and Vineland Co-op Nursery. A detailed description of these features is provided in Appendix B. The location of these features is provided in Figure 6.4, above.

6.5.7 COMMUNITY AND RECREATION FEATURES: CURRENT CONCERNS REGARDING EXISTING TRAFFIC

Several individuals with responsibilities for these community and recreation features identified concerns regarding the current volume of traffic. The principal of Vineland Public School noted that it is difficult for trucks ascending the Escarpment on Regional Road 24 to stop for school buses picking up or dropping off children on the hill. A spokesman for the Vineland Missionary Church reported that trucks break down on the hill and have to be blocked and repaired on the spot. When this occurs on the weekend, the trucks and cargo can remain on the hill for several days. Large trucks also park on Victoria Avenue, posing a safety hazard. The Vineland United Church reported that it has experienced structural damage to its foundation which is attributed to traffic vibrations. Ruptured water mains were attributed to traffic. Vineland Pentecostal Church is located two feet (2') from the edge of the road and suffers from truck noise. The Vineland Station Post Office presently has inadequate parking facilities for its customers who are forced to park on Regional Road 24.

The owner of Indian Lake Campground noted that there is too much traffic on Regional Road 24. Representatives of the Pelham Union Women's Institute expressed concern about the following problems on Regional Road 24: the section of the road that ascends the Escarpment in Vineland is treacherous in the winter; sections of the road are notorious for black ice and heavy ground fog; traffic accidents are weekly occurrences; and difficulties have been experienced in gaining access to and from Regional Road 24 due to the current level of traffic. Damastra Farms reported similar problems with access due to traffic volumes. Riders must cross Regional Road 24 to reach the riding area on the west side of the road and currently encounter some difficulty in doing so.

CHAPTER 7

BASELINE FUTURE SCENARIO

7.1 INTRODUCTION

A description of the future social environment in the absence of the OWMC facility provides a baseline against which the predicted changes associated with the facility can be assessed. In this chapter, a future scenario is developed for the site study area and the access route. A number of factors are considered, including population, migration, employment, land use and social conditions. The scenario was developed using Statistics Canada census data, historical records, Phase 4B resident interview results, municipal planning documents, selected demographic literature, and information provided by other consultants.

With the advent of Regional Government in 1970, the former Gainsborough Township became Ward 2 of the Township of West Lincoln, within the Regional Municipality of Niagara. These three areas will be discussed in the site-related scenario.[1] A more general scenario for Vineland and the access route study area then follows. While the scenarios provide a baseline against which to assess change associated with the OWMC facility, they also serve to highlight differences between the local study areas, the Niagara Region and Ontario.

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[1] The former Gainsborough Township, rather than the eastern portion of Gainsborough Township (i.e. the local community) is used as a study area for the purpose of developing the future scenario as census data could not be obtained for the area known as the 'local community'.

The chapter is divided into four sections. Section 7.2, 'Past and Present Trends: Former Gainsborough Township, Township of West Lincoln and Niagara Region', describes historical and current patterns for a number of factors and variables. Section 7.3, 'Future Trends: Former Gainsborough Township, Township of West Lincoln and Niagara Region' , provides a discussion of anticipated future trends in the three study areas. A summary of the previous material is given in Section 7.4. The future scenario for the access route study area is described in Section 7.5, 'Future Scenario: Vineland/Pelham/Lincoln (Access Route)'.

7.2 PAST AND PRESENT TRENDS: FORMER GAINSBOROUGH TOWNSHIP, TOWNSHIP OF WEST LINCOLN AND NIAGARA REGION

7.2.1 POPULATION

In this section, past trends in population are discussed. The variables discussed include total population, age structure, ethnic and religious composition, household characteristics, migration and length of residence.

In all three study areas, population has increased in absolute terms from 1951 to 1981, and is expected to continue to do so (Morehouse Economic Planning Consultants 1987) as indicated in Table 7.1.[1] According to Statistics Canada census data, the population of Gainsborough Township grew at a lower rate in the period between 1976 and 1981 than the rate recorded for the 1971-1976 period. For West Lincoln and Niagara Region as a whole, a similar trend of declining growth rate has occurred; the trend is not so clear in Gainsborough Township.

Census data for the years 1966 through 1981 indicate a declining trend in the population of children under the age of 19 for all three study areas (Tables 7.2, 7.3, 7.4). Information for the period between 1951 and 1981 indicates a rise in the percentages of the population over 65 years of age at the Regional level; however, this trend is not as clear at the Gainsborough or West Lincoln Township level. These trends in changing age structure are similar to those generally being experienced in

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[1] At the time of writing, 1986 census data was available only for population at the West Lincoln and Niagara Region levels of analysis. This information will be provided as an addendum to this report once it becomes available.

TABLE 7.1
POPULATION

	1951	1956	1961	1966	1971	1976	1981	1986[1]	2001 (projected)
GAINSBOROUGH absolute numbers	2343	2500	2532	2852	3070	3435	3512	-	-
% change between census years		6.7	1.3	12.6	7.6	11.9	2.2		
WEST LINCOLN absolute numbers	5426	6061	6521	7343	8395	9459	9846	9918	10,180[2]
% change between census years		11.7	7.6	12.6	14.3	12.7	4.1	0.7	2.6[3]
NIAGARA REGION absolute numbers	212,599	261,346	291,415	324,917	347,325	365,438	368,288	370,132	393,200[4] 381,900[5]
% change between census years		22.9	11.5	11.5	6.9	5.2	0.8	0.5	6.2[2,3,4] 3.2[2,3,5]
VINELAND[6] absolute numbers	-		-	1,187	2475	2850	2680	-	-
% change between census years					108.5	15.2	-6.0		

Sources: Statistics Canada 1951, 1956, 1961, 1966, 1971, 1976, 1981 and 1986 Census of Canada. Morehouse Economic Planning Consultants Site Assessment, Phase 4B: Economic Impact, 1987.

1. At the time of writing, 1986 census data was available only for population at the West Lincoln and Niagara Region levels of analysis.
2. Projection from Morehouse Economic Planning Consultants, Site Assessment, Phase 4B: Economic Impact, 1987.
3. It should be noted that these projected changes cover a 15-year period, rather than the 5-year intervals used previously.
4. Projection based on Ontario statistics, from Morehouse Economic Planning Consultants, Site Assessment, Phase 4B: Economic Impact. 1987.
5. Projection based on Regional forecasts, from Morehouse Economic Planning Consultants, Site Assessment, Phase 4B: Economic Impact. 1987.
6. In this and all other tables, Vineland was defined on the basis of census enumeration area boundaries for the purpose of data collection. The area covered is slightly larger than the Hamlet of Vineland itself; the population of Vineland itself is closer to 1150.

TABLE 7.2
POPULATION STRUCTURE - FORMER GAINSBOROUGH TOWNSHIP

	1981				1976		1971		1966		1961		1956		1951	
	FARM[1]	NON-FARM	TOTAL #	%	#	%	#	%								
Age Category																
Pre-Schooler 0-4[2]	530	925	305	8.7	300	8.7	325	10.6	362	12.7	308	12.2	282	11.3	267	11.4
School Age 5-19[2]			1155	33.0	1205	35.1	1095	35.7	956	33.5	807	31.9	785	31.4	643	27.4
Adults 20-64	615	1165	1780	50.8	1680	48.9	1395	45.4	1286	45.1	1195	47.2	1203	48.1	1222	52.2
Seniors 65+	65	195	260	7.4	250	7.3	240	7.8	248	8.7	222	8.8	230	9.2	211	9.0
Totals	1210 (34.6%)	2285 (65.4%)	3495		3435		3070[3]		2852		2532		2500		2343	

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada

Notes:

1. Population structure is differentiated as farm/non-farm only for 1981 data
2. Farm and non-farm data (1981) categorizes these age groups together under 'less than 15'
3. Does not add up due to rounding by Statistics Canada

TABLE 7.3
POPULATION STRUCTURE - WEST LINCOLN

Age Categories	1981 #	 %	1976 #	 %	1971 #	 %	1966 #	 %	1961 #	 %	1956 #	 %	1951 #	 %
Pre-Schoolers 0-4	820	8.3	870	9.1	835	9.9	883	12.0	745	11.4	736	12.1	598	11.0
School Age 5-19	3035	30.9	3100	32.5	2950	35.1	2413	32.9	2049	31.4	1754	29.0	1404	25.9
Adult 20-64	5260	53.5	4890	51.4	3940	46.9	3384	46.1	3132	48.0	3002	49.5	2867	52.8
Seniors 65+	720	7.3	665	7.0	665	7.9	663	9.0	595	9.1	563	9.4	557	10.3
Totals	9835		9525		8390		7343		6521		6060		5426	

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada

TABLE 7.4
POPULATION STRUCTURE - NIAGARA REGION

Age Categories	1981 #	%	1976 #	%	1971 #	%	1966 #	%	1961 #	%	1956 #	%	1951 #	%
Pre-Schoolers 0-4	25,530	6.4	26,135	7.1	28,360	8.2	34,110	10.5	33,585	11.5	31,448	12.0	24,472	11.5
School Age 5-19	92,005	25.0	103,185	28.2	106,655	30.7	98,857	30.4	83,721	28.7	67,528	25.8	49,675	23.4
Adults 20-64	210,510	57.1	200,645	54.9	186,820	52.8	165,546	51.0	151,192	51.9	142,852	54.7	122,744	57.7
Seniors 65+	42,145	11.4	35,835	9.8	30,490	8.8	26,404	8.1	22,917	7.9	19,518	7.5	15,708	7.4
Totals	368,280		365,800		347,325		324,917		291,415		261,346		212,599	

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada

Ontario (Table 7.5). However, the proportion of seniors remains lower, and the proportion of children higher, in Gainsborough and West Lincoln than in Ontario and the Niagara Region. The smaller proportion of residents 65 years of age and over could be attributed to the limited services and facilities available for senior citizens in rural areas; this could serve as an incentive for them to move to urban areas.

1981 census data shows that 34.6% of the population of Gainsborough Township belongs to farm households; the remaining 65.4% is non-farm.

A similar breakdown is not available at the West Lincoln or Niagara Region levels, or for earlier census years for Gainsborough. However, it can be expected that the 36% farm population is in all likelihood greater than that at the Regional, if not the West Lincoln, level of analysis. In Ontario, only 3.2% of the total population are farm residents (Table 7.5). While trend data is not available from Statistics Canada, the West Lincoln Official Plan reports a minor decline in farm population, a trend that has likely been experienced in Gainsborough Township. This trend follows those of Niagara Region and Ontario, and is largely due to farm consolidations and increased mechanization. The high interest rates and economic difficulty experienced in Ontario's farming communities in the early 1980s may have resulted in some additional losses of farm population in Gainsborough and West Lincoln.[1]

Census data generally indicate a rise in the number of households in conjunction with a decline in the average number of persons per household (Tables 7.6, 7.7, 7.8, 7.9). It should be noted, however, that the trend toward smaller household size is not so apparent in the three study areas prior to 1966. The average number of persons per household remains significantly higher in Gainsborough and West Lincoln Township than in the Niagara Region and Ontario. This is indicative of a rural agricultural community; historically, average household size has remained higher in rural areas than in the urban areas of Ontario.

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[1] A discussion of agriculture in the local community is provided in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.

TABLE 7.5
POPULATION STRUCTURE - ONTARIO

Age Categories	1981				1976 #	%	1971 #	%	1966 #	%	1961 #	%	1956 #	%	1951 #	%
	Farm	Non-Farm	Total #	%												
Pre-Schoolers 0-4	17,400	575,630	593,030	6.9	607,210	7.4	637,255	8.3	745,744	10.7	740,193	11.9	628,825	11.6	514,722	11.2
School Age 5-19	88,125	2,014,385	2,102,505	24.4	2,274,565	27.6	2,284,595	29.7	2,057,528	29.6	1,704,439	27.3	1,336,450	24.7	1,040,277	22.7
Adults 20-64	156,205	4,905,185	5,061,390	58.7	4,643,760	56.2	4,136,830	53.9	3,589,876	51.5	3,283,387	52.7	2,985,283	55.3	2,642,180	57.5
Seniors 65+	18,105	850,095	868,200	10.1	738,915	8.9	644,410	8.4	567,722	8.2	508,073	8.2	454,375	8.4	400,363	8.7
Totals	279,835 (3.2%)	8,345,295 (96.8%)	8,625,125													

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada

TABLE 7.6
POPULATION CHARACTERISTICS - FORMER GAINSBOROUGH TOWNSHIP

	1981		1976		1971		1966		1961		1951	
	#	%	#	%	#	%	#	%	#	%	#	%
Number of Households	945		890		765		666		639		not available	
Average Household Size	3.6		3.8		4.0		4.3		4.0			
Ethnic Composition												
British	1660	47.7							1003	39.6	1107	47.2
French	10	0.3							49	1.9	21	0.9
Dutch	905	26.0							636	25.1	114	4.9
German	170	4.9	not available		not available		not available		290	11.5	428	18.3
Polish	90	2.6							184	7.3	290	12.4
Ukrainian	85	2.4							76	3.0	91	3.9
Other	555	16.0							294	11.6	292	12.5
Religious Composition[1]												
Catholic	345	10.0							364	14.4	479	20.4
United Church	1055	30.5							976	38.5	974	41.6
Anglican	250	7.2							118	4.7	133	5.7
Other Protestant	1495	43.2	not available		not available		not available		339	13.4	314	13.4
Eastern Orthodox	60	1.7							27	1.1	52	2.2
Jewish	15	0.4							15	0.6	24	1.0
Eastern Non-Christian	0	0							0	0	0	0
Other	0	0							693	27.4	367	15.7
No religious preference	240	6.9							-	-	-	-
Detailed Religious Composition:												
Adventist	10	0.3										
Anglican	235	6.8										
Baptist	95	2.7										
Brethren in Christ	50	1.4										
Christian Reformed	545	15.7										
Churches of Christ Disciples	15	0.4										
Free Methodist	25	0.7										
Greek Orthodox	60	1.7	not available		not available		not available		not available		not available	
Jehovah's Witnesses	25	0.7										
Jewish	15	0.4										
Lutheran	115	3.3										
Mennonite	15	0.4										
Pentecostal	120	3.5										
Presbyterian	95	2.7										
Roman Catholic	325	9.4										
Salvation Army	15	0.4										
Ukrainian Catholic	15	0.4										
United Church	1040	29.9										
No Religious Preference	285	8.2										
Ignore	375	10.8										

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada.
Notes: No information available for 1956.

TABLE 7.6: POPULATION CHARACTERISTICS - FORMER GAINSBOROUGH TOWNSHIP (cont'd)

	1981		1976		1971		1966		1961		1951	
	#	%	#	%	#	%	#	%	#	%	#	%
Tenure												
Owned	800	84.6	745	83.7	640	84.8	579	86.9	565	88.4	not available	
Rented	145	15.3	145	17.3	115	15.2	87	13.1	74	11.6		
Length of Residence												
less than 1 year	70	7.4	not available		not available		not available		51	8.0	not available	
1-2 years	110	11.6							83	13.0		
3-5 years	185	19.6							75	11.7		
6-10 years	225	23.8							94	14.7		
more than 10 years	360	38.0							336	52.6		
Education (age 15 and over)												
Elementary or some elementary	705	27.4	805	34.6	890	36.9	not available		not available		not available	
Secondary or some secondary	1275	49.6	1120	48.2	1395	57.9						
College or some college	405	15.8	260	11.2	60	2.5						
University or some university	185	7.2	140	6.0	65	2.7						
Average Household Income	$25,193		not available		not available		not available		not available		not available	

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada
Notes: No information available for 1956.

TABLE 7.7
POPULATION CHARACTERISTICS - WEST LINCOLN

	1981		1976		1971		1966		1961		1951	
	#	%	#	%	#	%	#	%	#	%	#	%
Number of Households	2,910		2,570		2,130		1803		1675		not	
Average Household Size	3.5		3.6		3.9		4.1		3.9		available	
Ethnic Composition												
British	5195	52.8			4675	55.8			3408	52.3	3156	58.2
French	145	1.5			185	2.2			85	1.3	64	1.2
Dutch	1730	17.6	not		1695	20.2	not		1142	17.5	287	5.3
German	565	5.7	available		615	7.3	available		590	9.0	701	12.9
Polish	245	2.5			315	3.8			405	6.2	469	8.6
Ukrainian	195	2.0			175	2.1			191	2.9	180	3.3
Other	1770	18.0			725	8.6						
Religious Composition												
Catholic	1365	13.8			1225	14.6			899	13.8	874	16.1
United Church	2915	29.6			2715	32.3			2780	42.6	2496	46.0
Anglican	870	8.8	not		820	9.8	not		555	8.5	488	9.0
Other Protestant	3640	37.0	available		1245	14.8	available		805	12.3	781	14.4
Eastern Orthodox	285	2.9			245	2.9			75	1.2	81	1.5
Jewish	45	0.5			5	0.1			78	1.2	84	1.5
Eastern Non-Christian	20	0.2			-	-			-	-	-	-
No Religious Preference	710	7.2			330	3.9			-	-	-	-
Other	-	-			1815	21.6			1329	20.4	622	11.5
Tenure												
Owned	2,350	84.6	2150	83.8	1,780	83.2	1544	85.5	1506	90.0	not	
Rented	425	15.3	415	16.2	360	16.8	261	14.5	169	10.1	available	
Length of Residence												
less than 1 year	280	10.0			310	14.5			139	8.3		
1-2 years	355	12.7	not		300	14.0	not		193	11.5	not	
3-5 years	575	20.6	available		325	15.2	available		256	15.3	available	
6-10 years	535	19.2			345	16.1			247	14.7		
more than 10 years	1045	37.5			865	40.3			840	50.1		
Education (age 15 and over)												
Elementary or some elementary	1,505	21.2	1,885	29.2	2,130	37.3						
Secondary or some secondary	3,405	48.0	3,230	50.0	3,080	53.9	not		not		not	
College or some college	1,560	22.0	840	13.0	not available		available		available		available	
University or some university	620	8.7	510	7.9	500	8.8						
Average Household Income	$25,050		not available		$8,402[1]		not available		not available		not available	

Source: Statistics Canada. 1951, 1961, 1966, 1971, 1976, 1981 Census of Canada.

[1] Unadjusted values

TABLE 7.8
POPULATION CHARACTERISTICS - NIAGARA REGION

	1981		1976		1971		1966		1961		1956		1951	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Number of Households	127,490		116,935		100,950		88,541		73,203		69,311		56,650	
Average Household Size	2.8		3.1		3.4		3.7		4.0		3.8		3.8	
Ethnic composition														
British	182,960	50.2			187,735	54.0			151,437	52.0			125,758	59.2
French	23,640	6.5			27,840	8.0			20,999	7.2			14,130	6.6
Dutch					15,280	4.4	not available		14,169	4.9	not available		8,797	4.1
German	158,155	43.4	not available		32,150	9.3			27,789	9.5			16,828	7.9
Polish					10,150	2.9			9,743	3.3			6,473	3.0
Ukrainian					13,240	3.8			10,585	3.6			8,534	4.0
Other					88,775	25.6			56,693	19.5			32,076	15.1
Religious Composition														
Catholic	133,850	36.7			119,440	34.4			94,137	32.3			58,415	27.5
United Church	59,440	16.3			62,945	18.1			60,481	20.8			47,394	22.3
Anglican	55,850	15.3			59,395	17.1	not available		56,344	19.3	not available		47,339	22.3
Other Protestant	87,400	23.9	not available		51,280	14.8			64,456	22.1			48,259	22.7
Eastern Orthodox	5,200	1.4			4,885	1.4			4,342	1.5			3,484	1.6
Jewish	1,240	0.3			1,160	0.3			1,235	0.4			1,117	0.5
Eastern Non-Christian	1,655	0.5			not available				37	.01			46	.02
No Religious Preference	19,910	5.5			11,205	3.2			not available				not available	
Other	not available				37,025	10.7			10,383	3.6			6,545	3.1
Tenure														
Owned	92,070	72.2	85,800	73.4	73,230	72.6	65,866	74.4	60,230	76.6	not available		39,855	70.4
Rented	35,415	27.8	31,135	26.6	27,665	27.4	22,675	25.6	18,378	23.4			16,790	29.6
Length of Residence														
less than 1 year	16,870	13.2			14,875	14.8			10,275	13.1			4,975	8.8
1-2 years	18,580	14.6	not available		14,315	14.2	not available		10,924	13.9	not available		24,935	44.0
3-5 years	24,505	19.2			15,210	15.1			15,595	19.8				
6-10 years	21,045	16.5			16,370	16.2			15,391	19.6			9,985	17.6
more than 10 years	46,490	36.5			40,065	39.7			26,423	33.6			16,750	29.6
Education (age 15 and over)														
Elementary or some elementary	54,975	19.3	66,605	24.4	76,470	30.6	not available							
Secondary or some secondary	131,635	46.2	136,100	49.8	151,820	60.8			not available		not available		not available	
College or some college	62,905	22.1	35,010	12.8	not available									
University or some university	35,725	12.5	35,400	13.0	21,430	8.6								
Average Household Income	$23,436		not available		$9,604[1]		not available		$5,716[1,2]		not available		not available	

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada.

Notes:
1. Unadjusted values
2. Average of Lincoln and Welland Counties, Average Household Income, unadjusted values.

TABLE 7.9
POPULATION CHARACTERISTICS - ONTARIO

	1981 #	%	1976 #	%	1971 #	%	1966 #	%	1961 #	%	1956 #	%	1951 #	%
Number of Households	2,969,785		2,634,620		2,228,160		1,876,545		1,640,881		1,392,491		1,181,126	
Average Household Size	2.8		3.1		3.4		3.6		3.7		3.8		3.8	
Ethnic Composition														
British	4,487,800	52.6			4,576,010	59.4			3,711,536	59.5			3,081,919	67.0
French	652,905	7.7			737,360	9.6			647,941	10.4			477,677	10.4
Dutch	191,125	2.2	not		206,940	2.7	not		191,017	30.6	not		98,373	2.1
German	373,390	4.4	available		475,315	6.2	available		400,717	6.4	available		222,028	4.8
Polish	122,945	1.4			144,115	1.9			149,524	2.4			89,825	2.0
Ukrainian	133,995	1.6			159,875	2.1			127,911	2.1			93,595	2.0
Other	2,572,105	30.1			1,403,490	18.2			1,007,446	16.2			534,125	11.6
Religious Composition														
Catholic	3,036,245	35.6			2,568,695	33.4			1,919,914	30.8			1,181,671	25.7
United Church	1,655,555	19.4			1,682,820	21.9			1,655,242	26.5			1,320,366	28.7
Anglican	1,164,315	13.6	not		1,220,535	15.8			1,117,862	17.9			936,002	20.4
Other Protestant	1,599,090	18.7	available		1,090,660	14.2	not		1,234,102	19.8	not		812,916	17.7
Eastern Orthodox	167,320	2.0			134,465	1.8	available		83,565	1.3	available		48,684	1.1
Jewish	148,255	1.7			125,310	1.6			109,344	1.8			85,467	1.9
Eastern non-Christian	137,115	1.6			not available				4,146	0.1			not available	
No Religious Preference	618,600	7.3			not available				not available				not available	
Other	7,775	0.1			880,615	11.4			112,017	1.8			212,436	4.6

Detailed Religious Composition		
Adventist	16,265	0.2
Anglican	1,164,315	13.6
Baptist	288,465	3.4
Brethren in Christ	15,540	0.2
Christian Reformed	50,670	0.6
Churches of Christ Disciples	6,545	0.1
Free Methodist	8,995	0.1
Greek Orthodox	140,610	1.7
Jehovah's Witnesses	48,465	0.6
Jewish	148,255	1.7
Lutheran	254,180	3.0
Mennonite	46,485	0.5
Pentecostal	119,530	1.4
Presbyterian	517,020	6.1
Roman Catholic	2,986,170	35.0
Salvation Army	45,065	0.5
Ukrainian Catholic	49,310	0.6
United Church	1,655,555	19.4
No Religious Preference	618,600	7.3
Other	354,225	4.2

TABLE 7.9: POPULATION CHARACTERISTICS - ONTARIO (cont'd)

	1981		1976		1971		1966		1961		1956		1951	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Tenure														
Owned	1,878,950	63.2	1,676,250	63.6	1,400,341	62.9	1,259,453	67.1%	1,157,229	70.5	not available		819,835	69.5
Rented	1,090,830	36.7	958,370	36.4	825,147	37.1	617,092	32.9%	483,521	29.5			360,245	30.5
Length of Residence														
less than 1 year	488,350	16.4%			390,390	17.5%			249,725	15.2			91,735	7.8
1-2 years	510,515	17.2%	not available		378,805	17.0%	not available		268,568	16.4			512,930	43.4
3-5 years	599,950	20.2%			361,495	16.2%			338,405	20.6	not available			
6-10 years	482,750	16.3%			361,920	16.3%			284,918	17.4			192,745	16.3
more than 10 years	888,210	29.9%			732,600	32.9%			499,134	30.4			383,715	32.5
Education														
Elementary or some elementary	1,160,335	17.5	1,393,935	25.1	1,563,251	32.8			1,710,175	43.9				
Secondary or some secondary	2,846,455	42.8	2,503,355	45.1	2,721,392	57.1	not available		1,944,307	49.9	not available		not available	
College or some college	1,519,315	22.9	808,765	14.6	238,301	5.0			not available					
University or some university	1,123,610	16.9	844,290	15.2	243,067	5.1			240,970	6.2				
Average Household Income	\$25,577[1]		not available		\$22,666[1]		not available		\$4,399[2]		not available		not available	

Source: Statistics Canada. 1951, 1956, 1961, 1966, 1971, 1976 and 1981 Census of Canada

1. 1980 dollars
2. based on earnings of head of household only, unadjusted dollar values

The Gainsborough Township area was originally settled in the late 1700s by United Empire Loyalists (West Lincoln Historical Society 1985, 34). Descendants of many of these families still live in the area. Prior to World War I, immigrants to the area were largely of British or Dutch origin. Following the War, immigrants of Dutch, Polish, Ukrainian and Greek ancestry predominated. In all three study areas persons of British origin comprise the majority, with approximately one-half of the population being comprised of this group (Tables 7.6, 7.7, 7.8). At the Gainsborough Township level, 48% are of British origin. The data show that those of Dutch descent account for 26% of the population, and people of German background, a further 4.9%. The Polish and Ukrainian communities make up 2.6% and 2.4% of the population, respectively, while all other groups make up the remaining 16% of Gainsborough Township. Although not evident from census data, a prominent group in the study area is of Greek descent (West Lincoln Historical Society 1985, 39).

Census data indicate that since 1951, the proportion of the population of British descent has declined marginally in both West Lincoln and Niagara Region, although it has remained somewhat constant in the former Gainsborough Township. Data for the period between 1961 and 1981 indicate a rise in the proportion of people of Dutch descent in the former Gainsborough Township and West Lincoln. Since 1961, the proportion has remained relatively constant, with 26% and 18% of the population of Gainsborough and West Lincoln Townships, respectively, claiming Dutch ancestry. The data also indicate that there has been a declining proportion of people of German, Polish and Ukrainian descent in the former Gainsborough Township and West Lincoln Township. This trend is not so evident at the Regional level.

The Dutch population in West Lincoln is often associated with greenhouse, dairy, poultry and hog farming operations; the Greeks are often engaged in the poultry farming business (West Lincoln Historical Society 1985, 39). In the study area around the proposed OWMC site, the Dutch population is primarily associated with dairy operations, representing 65% of the area's dairy farmers. The Greeks account for 80% of the poultry farmers in the area.[1]

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[1] Agricultural aspects of the local community are discussed further in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.

In the Gainsborough and West Lincoln areas, the majority of the population has been classified as 'Other Protestant' (approximately 40%; Tables 7.6, 7.7). This would include the Christian Reformed Church, which a large number of the Dutch community attend. This denomination accounts for 16% of the population in Gainsborough Township (Table 7.6); in the province as a whole , less than 1% of the population is Christian Reformed denomination (Table 7.9). The United Church (differentiated from 'Other Protestant' in this instance) follows with approximately 30% in each area. The Catholic denomination comprises 10% and 14% of the population, while the Anglican faith accounts for 7% and 9% of the population, respectively, in Gainsborough and West Lincoln. The remaining populations belong to other denominations or expressed no religious preference.

The Niagara Region reflects a different pattern of religious affiliation, with Catholics comprising 37% of the population, 'Other Protestants' 24%, United Church 16%, and Anglican 15% (Table 7.8). The remainder of the population belongs to other denominations or expressed no religious preference. Religious composition in the Niagara Region is similar to that of Ontario (Table 7.9).

Many of the church communities in Gainsborough Township were established during the early years of settlement and most are Protestant denominations. Census data indicate that residents with Protestant affiliations (other than the United and Anglican churches) have represented an increasing proportion of the population of both the former Gainsborough Township and West Lincoln since 1951. Over the period between 1951 and 1981, the proportions of the population belonging to United and Catholic denominations have decreased. No clear trend is evident for the Anglican faith in either the Gainsborough or West Lincoln study areas.

In both the Niagara Region and Ontario, Catholics have historically comprised the largest religious denomination, and this proportion has increased since 1951. Unlike the trend evident in the more local study areas, the proportion of the population with Protestant affiliations has not increased significantly at the Regional or provincial level.

In terms of average household income, 1981 census data provide values of $25,193 for Gainsborough Township, $25,050 for West Lincoln, and $23,436 for the Region of Niagara (Tables 7.6, 7.7, 7.8). In all three study areas, the average household income is lower than for Ontario (Table 7.9). Only limited trend data are available for average household income, although it can be generally stated that average household income for West Lincoln and Niagara Region has increased and that the relationship relative to the province as a whole has remained constant.

The trends for tenure over the years 1961 to 1981 are fairly constant (Tables 7.6, 7.7, 7.8, 7.9). In Gainsborough and West Lincoln, approximately 85% of the private dwellings are owned, the remainder rented. Phase 4B resident interview data concur with these values.[1] The proportion of owned dwellings is somewhat less in the Niagara Region as a whole -- about 72% -- and Ontario -- about 63%.

In terms of length of residency, census data indicate that approximately 37% of the residents in all three study areas had lived at the same address for more than 10 years (Tables 7.6, 7.7, 7.8). This reflects a longer length of residence than is evident in Ontario, where 29.9% of residents have lived at the same address for more than 10 years (Table 7.9). Phase 4B interview data indicate that 52% of the respondents had lived at the same address for more than 10 years.[2]

In Niagara Region, a slight decline in the percentage of the population living at the same address for more than 10 years occurred between 1971 and 1981. This trend is also evident in the former Gainsborough Township and West Lincoln over the period between 1961 and 1981. While trend data are limited for the former Gainsborough Township, West Lincoln and Niagara Region, it appears that residents in these areas have historically remained at the same address longer than residents in Ontario as a whole.

The level of education in all three study areas has increased between 1971 and 1981 (Tables 7.6, 7.7, 7.8). This is similar to the trend toward higher levels of education observed in Ontario (Table 7.9) and Canada (Parliament 1986). However, the level of education attained by adults in West Lincoln and Gainsborough is lower than the average for the province (IER 1985).

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1. Question 4.
2. Question 1.

7.2.2 MIGRATION

A value for net migration can be calculated based on birth, death and total population figures for West Lincoln and the Niagara Region (Tables 7.10 and 7.11).[1,2] The values for net migration in West Lincoln were +96 for 1971 to 1975,[3] -53 for 1976 to 1980, and -337 for 1981 to 1985. For the Niagara Region, net migration was +4780 from 1971 to 1975,[3] -5256 from 1976 to 1980, and -1521 from 1981 to 1985. Since 1976, both West Lincoln and Niagara Region have experienced net out-migration. During this period, Niagara Region experienced a decline in employment, particularly in the heavy industry sector, concurrent with an increase in the number of people participating in the labour force (see next section on Employment). As a result, a number of residents left the Region to seek employment elsewhere. Population increases in West Lincoln and the Niagara Region can thus be attributed to births among the existing population rather than population influx.

7.2.3 EMPLOYMENT[4]

In terms of labour force activity, the participation rate in Gainsborough peaked in 1976 (Table 7.12). Unemployment rates initially increased, but have levelled off in the period between 1971 and 1981. In West Lincoln, the participation rate in the labour force also peaked in 1976, while the unemployment rate declined between 1971 and 1976, and rose between 1976 and 1981 (Table 7.13). For the Niagara Region, the labour force participation rate has increased between 1951 and 1981. The unemployment rate rose between 1951 and 1976, but has declined between 1976 and 1981 (Table 7.14). Limited trend data indicate that increasing participation rates in the Region are consistent with a similar trend in Ontario (Table 7.15).

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[1] Trend data are not available at the Gainsborough Township level.

[2] Calculated from annual figures from the Auditor General's Office.

[3] Based on 3 years of information, as only partial data is available for the period 1971 to 1975 (e.g., 1973 onward).

[4] A discussion of future employment trends can be found in Morehouse Economic Planning Consultants. Site Assessment, Phase 4B: Economic Impact. 1987.

TABLE 7.10
MIGRATION - WEST LINCOLN

Year	Number of Births	Number of Deaths	Total Population	Net Migration	
1973	156	56	9060		
1974	168	51	9180	+3	+96
1975	164	67	9370	+93	
1976	136	61	9459	+14	-53
1977	155	45	9534	-35	
1978	169	51	9666	+14	
1979	159	56	9731	-38	
1980	169	69	9823	-8	
1981	142	53	9846	-66	-337
1982	173	52	9935	-32	
1983	175	54	10020	-36	
1984	168	57	10010	-121	
1985	166	44	10050	-82	

Source: Annual Figures, Auditor General's Office

TABLE 7.11
MIGRATION - NIAGARA REGION

Year	Number of Births	Number of Deaths	Total Population	Net Migration	
1973	4884	2830	354,800		
1974	4886	2863	359,300	+2477	+4780
1975	5112	2815	363,900	+2303	
1976	4734	2977	365,438	-219	-5256
1977	4938	2955	365,442	-1979	
1978	4715	2970	367,183	-4	
1979	4820	2931	367,672	-1400	
1980	4672	3025	367,665	-1654	
1981	4612	3127	368,288	-862	-1521
1982	4695	3024	369,232	-727	
1983	4539	3113	371,320	+662	
1984	4729	3029	373,010	-10	
1985	4754	3300	373,880	-584	

Source: Annual Figures, Auditor General's Office

TABLE 7.12
EMPLOYMENT - FORMER GAINSBOROUGH TOWNSHIP

Labour Force Activity	1981	1976	1971
Population 15 years and over	2495	2315	1965
In labour force - employed	1420	1415	1120
In labour force - unemployed	55	55	30
Average Participation Rate	59.1%	63.5%	60.7%
Average Unemployment Rate	3.7%	3.7%	2.6%

Source: Statistics Canada. 1971, 1976, 1981 Census of Canada

TABLE 7.12: EMPLOYMENT - FORMER GAINSBOROUGH TOWNSHIP (cont'd)

Occupation	1981		1971		1961[1]	
	#	%	#	%	#	%
All occupations	1495	100.0	1135	100.0	943	100.0
Not applicable	5	0.3	-	-		
Not stated	75	5.0	100	8.8		
Managerial, administrative and related occupations	35	2.3	15	1.3		
Teaching and related occupations	35	2.3	25	2.2		
Medicine and health	40	2.7	10	0.9		
Technological, social, religious and related occupations	55	3.7	10	0.9		
Clerical and related occupations	135	9.0	70	6.2		
Sales occupations	85	5.7	50	4.4		
Service occupations	125	8.4	50	4.4		
Primary occupations (includes farming, horticulture and animal husbandry)	320	21.4	380	33.5	454	48.1
Other primary occupations	10	0.7	5	0.4		
Processing occupations	100	6.7	60	5.3		
Machining, product fabricating, assembling and repairing occupations	190	12.7	150	13.2		
Construction trades occupations	95	6.4	75	6.6		
Transport equipment operating occupations	120	8.0	85	7.5		
Other	70	4.7	50	4.4		

Source: Statistics Canada. 1961,1971, 1981 Census of Canada.
Notes:
1. Comparison with all 1961 data cannot be made as the classification systems are different between years.

TABLE 7.13
EMPLOYMENT - WEST LINCOLN

Labour Force Activity	1981	1976	1971
Population 15 years and over	7,100	6,460	5,510
In labour force - employed	4,215	4,130	3,240
In labour force - unemployed	200	120	115
Average Participation Rate	62.2%	65.8%	60.9%
Average Unemployment Rate	4.5%	2.8%	3.4%

Source: Statistics Canada. 1971, 1976, 1981 Census of Canada

Industry Divisions	1981		1971	
	#	%	#	%
All industries	4,405		3,335	
Primary industries	880	20.0	805	24.1
Manufacturing industries	1,180	26.8	910	27.3
Construction industry	350	8.0	225	6.7
Transportation, communication, and other utilities	235	5.3	160	4.8
Trade	750	17.0	370	11.1
Finance, insurance and real estate	135	3.1	80	2.4
Community, business and personal service industries	755	17.1	420	12.6
Public administration and defence	125	2.8	75	2.2
Industry unspecified or undefined			300	9.0

Source: Statistics Canada. 1971 and 1981 Census of Canada

TABLE 7.13: EMPLOYMENT - WEST LINCOLN (cont'd)

Occupation	1981		1971		1961[1]	
	#	%	#	%	#	%
All occupations	4,405		3,025		2404	
Managerial, administrative and related occupations	280	6.4	70	2.3		
Teaching and related occupations	135	3.1	95	3.1		
Medicine and health	165	3.7	70	2.3		
Technological, social, religious, artistic and related occupations	170	3.9	55	1.8		
Clerical and related occupations	570	12.9	260	8.6		
Sales occupations	280	6.4	210	6.9		
Service occupations	300	6.8	175	5.8		
Primary occupations (includes farming, horticulture and animal husbandry)	760	17.3	835	27.6	949	39.5
Processing occupations	265	6.0	155	5.1		
Machining, product fabricating, assembing and repairing occupations	570	12.9	480	15.9		
Construction trades occupations	365	8.3	235	7.8		
Transport equipment operating occupations	290	6.6	215	7.1		
Other	255	5.8	170	5.6		

Source: Statistics Canada. 1961, 1971, 1981 Census of Canada
Notes:
1. Comparisons with all 1961 occupation data cannot be made as the classification systems are different between years.

TABLE 7.14
EMPLOYMENT - NIAGARA REGION

Labour Force Activity[1]	1981	1976	1971	1961	1951
Population 15 years and over	285,065	273,120	246,405	195,511	155,778[2]
In labour force - employed	166,850	148,460	134,505	100,915	85,771
In labour force - unemployed	12,620	12,835	10,985	4,326	955
Average Participation Rate	63.0%	59.1%	59.0%	53.8%	55.7%
Average Unemployment Rate	7.0%	8.0%	7.6%	4.1%	1.1%

Industry Divisions	1981	
	#	%
All industries	176,790	
Primary industries	7,570	4.3
Manufacturing industries	54,100	30.6
Construction industry	10,075	5.7
Transportation, communication and other utilities	10,835	6.1
Trade	27,845	15.7
Finance, insurance and real estate	7,030	4.0
Community, business and personal service industries	51,845	29.3
Public administration and defence	7,495	4.2

Source: Statistics Canada. 1951,1961, 1971, 1976, 1981 Census of Canada

Notes:
1. 1956 and 1966 Labour Force activity is not available
2. Population 14 years and over.

TABLE 7.14: EMPLOYMENT - NIAGARA REGION (cont'd)

Occupation	1981 #	%	1971 #	%	1961[1] #	%	1951[1] #	%
All occupations	176,790		131,155		104,640		86,578	
Managerial, administrative and related occupations	12,750	7.2	4,915	3.7				
Teaching and related occupations	6,845	3.9	5,505	3.9				
Medicine and health	6,935	3.9	4,810	3.4				
Technological, social, religious, artistic and related occupations	9,950	5.6	5,335	3.8				
Clerical and related occupations	28,190	15.9	19,605	13.9				
Sales occupations	16,000	9.1	13,375	9.4				
Service occupations	23,585	13.3	16,290	11.5				
Primary occupations (includes farming, horticulture and animal husbandry)	7,180	4.1	6,770	[illegible]	5,420	5.1[2]	6,918	8.0[2]
Processing occupations	10,755	6.1	8,575	6.0				
Machining, product fabricating, assembling and repairing occupations	28,285	16.0	22,060	15.8				
Construction trades occupations	9,810	5.5	8,855	6.2				
Transport equipment operating occupations	6,180	3.5	5,295	3.7				
Other	10,325	5.8	9,705	6.8				

Source: 1951, 1961, 1971, 1981 Census of Canada

Notes:

1. Comparisons with 1961 and 1951 occupation data cannot be made because the classification systems are different.
2. Primary occupations are classified in a similar way between years.

TABLE 7.15
EMPLOYMENT - ONTARIO

	1981		1976		1971		1966		1961		1956		1951	
Labour Force Activity														
Population 15 years and over	6,603,000		6,081,000		5,405,000		4,660,000		4,238,000		3,773,000		3,351,000	
Population in Labour Force														
Employed	4,171,000		3,643,000		3,113,000		2,714,000		2,269,000		2,096,000		1,838,000	
Unemployed	293,000		239,000		178,000		72,000		132,000		51,000		32,000	
Average Participation Rate	67.6%		63.8%		60.9%		59.8%		56.7%		56.9%		55.8%	
Average Unemployment Rate	6.6%		6.2%		5.4%		2.6%		5.5%		2.4%		1.7%	
Occupations Note: Categories used change between years	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Managerial, administrative and related occupations	408,760	9.3			157,070	4.7			192,898	8.1			150,217	8.0
Teaching and related occupations	175,650	4.0			128,500	3.8			239,915	10.0			141,355	7.5
Medicine and health	186,560	4.2			124,360	3.7								
Technological, social, religious and related occupations	318,020	7.2			179,075	5.3			not available				not available	
Clerical and related occupations	881,780	20.0	not available		590,270	17.6	not available		352,225	14.7	not available		245,414	13.0
Sales occupations	400,065	9.1			320,495	9.6			172,635	7.2			118,586	6.3
Service occupations	513,485	11.6			355,935	10.6			319,613	13.4			193,510	10.3
Primary occupations (includes farming, horticultural and animal husbandry)	147,530	3.3			142,790	4.3			172,171	7.2			202 544	10.8
Other primary occupations	33,250	0.8			32,570	1.0			41,067	1.7			40,030	2.1
Processing occupations	167,680	3.8			123,185	3.7			441,440	18.5			402,386	21.4
Machining, product fabricating, assembling and repairing occupations	549,645	5.6			489,845	14.6								
Construction	247,645	5.6			208,680	6.2			119,501	5.0			103,757	5.5
Transport equipment operating occupations	155,860	3.5			120,640	3.6			164,529	6.9			138,400	7.4
Other	233,990	5.3			380,940	11.4			177,021	7.4			146,249	6.8

Source: Statistics Canada 1951, 1956, 1961, 1966, 1971, 1976, 1981 Census of Canada

Census data for the former Gainsborough Township and West Lincoln study areas indicate a decrease in the number of persons claiming a 'primary' occupation between 1971 and 1981 (Tables 7.12, 7.13).[1] Tables 7.14 and 7.15 show a similar trend has occurred in Niagara Region and Ontario between 1951 and 1981. 'Primary occupations' include farming, agribusiness and horticulture. The decline coincides with an observed trend toward increased mechanization, farm consolidation and 'part-time' farming (Institute of Environmental Research 1985; Township of West Lincoln 1979). The values in Tables 7.12, 7.13, 7.14 and 7.15 indicate the relative importance of agriculture in the economies of Gainsborough and West Lincoln as compared to the Niagara Region and Ontario. The Region itself is the home to much heavy industry, particularly in Welland, St. Catharines and Niagara Falls. The decline in primary occupations has been accompanied by increases in the management/administration, medical/health, technical/social/religious, clerical and service occupations in all three study areas.

7.2.4 LAND USE/SERVICES

According to the West Lincoln Official Plan, agriculture is the dominant land use in rural areas. The majority of commercial and industrial uses are in the Smithville urban area and to a lesser extent hamlets such as Wellandport and St. Ann's. Smithville is the site of an industrial park, which is expected to host any further development. A rise in the demand for low-density, non-farm residential development in rural areas has been observed (Institute of Environmental Research 1985). Some of this can be attributed to commuters from larger urban centers in the Niagara Region seeking a rural environment.

Official Plan policies concur with stated Provincial policies by encouraging residential development to occur within existing hamlets or Smithville, and by advocating the preservation of agricultural land and practices. Trends in farm mechanization and consolidation are acknowledged.

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1. A discussion of agriculture in the local community can be found in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.

7.2.5 SOCIAL CONDITIONS

Gainsborough Township can be characterized as a rural agricultural community. This is evident from the high proportion of employment in primary industries (which include farming, horticulture and animal husbandry) and agriculture being the dominant land use. A higher than average household size, a greater proportion of the population residing in their home for more than 10 years, and high levels of home ownership in comparison to provincial statistics for these characteristics are indicative of a rural-agricultural community (Institute of Environmental Research 1985). These latter two characteristics indicate a relatively high degree of stability in the area.

Residents interviewed in Phase 4B generally reported a high level of satisfaction with their community overall. Frequently cited as important characteristics of the community were 'friendly people', 'peace and quiet', 'way of life/country lifestyle/small town atmosphere' and 'clean air/environment'.[1] Thus respondents perceive their community to be a rural one, and express satisfaction with its characteristics.

The majority of respondents reported that their close friends live in West Lincoln,[2] and that they have relatives in the community.[3] Most respondents entertained or assisted their neighbours on a regular basis.[4] In terms of community group involvement, the majority indicated they were involved in some church, athletic, social or similar organization.[5] Church attendance is also relatively high among survey respondents.[6] These characteristics indicate a high degree of community involvement and cohesion.

7.3 FUTURE TRENDS: FORMER GAINSBOROUGH TOWNSHIP, TOWNSHIP OF WEST LINCOLN AND NIAGARA REGION

The following sections provide a discussion of the anticipated future trends in the three study areas.

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[1] Questions 58 and 59.
[2] Question 68.
[3] Question 69.
[4] Question 71.
[5] Question 72.
[6] Question 75.

7.3.1 POPULATION

Population projections for West Lincoln and Niagara Region indicate some future recovery is anticipated, although not at the level of growth experienced during the early 1970s (Table 7.1) (Morehouse Economic Planning Consultants 1987). No population projections are available for the former Gainsborough Township. Population has increased in Gainsborough since 1951, although the rate of increase has slowed in recent years, a trend shared with West Lincoln and Niagara Region. No major development proposals are planned that would attract new residents to the area. The municipal official plan directs residential development to Smithville and existing hamlets and restricts residential development in the rural-agricultural area. Relatively few consents and building permits have been granted in West Lincoln since 1980 (an average of 20 consents and 28 building permits annually). The provision of municipal sewer and water services is anticipated to occur by late 1988. This will facilitate further development and growth in Smithville (Leon Kentridge Associates Ltd. 1988).

On the basis of these factors it is anticipated that the population of Gainsborough will remain relatively stable with limited growth.

Gainsborough has experienced a declining trend in the proportion of children under the age of 19 years in the population, as has West Lincoln, Niagara Region and Ontario. This decline has occurred as couples delay starting a family, or choose to have fewer or no children (as evidenced in the trends towards smaller household size). The decline in the proportion of the population in this age group is expected to continue. As past trends would indicate, the proportion of children less than 19 years old will likely remain higher in Gainsborough and West Lincoln than that for Niagara Region and Ontario.

The proportion of the population over 65 years of age has been increasing throughout Ontario and a similar trend is evident in Niagara Region. Niagara Region has had a slightly higher proportion of seniors than Ontario as a whole. Such a trend is not clear in Gainsborough and West Lincoln, where the proportion of seniors has remained relatively stable, likely due to the limited services and facilities available for them in the rural areas. Unless more services and facilities become available to this age group, they will probably continue to leave for other communities within Niagara Region, resulting in a generally stable proportion of senior citizens in Gainsborough and West Lincoln in the future.

The proportion of farm to non-farm households has been declining in Ontario and is anticipated to continue to decline as further farm consolidations and increased mechanization occur. While the decline in Gainsborough and West Lincoln may not be as significant as some areas in Ontario, some decline in farm population is expected in the future.[1]

The trend towards an increase in the number of households and a decline in the average number of persons per household is evident in the three study areas and in Ontario. This trend is expected to continue as the number of senior citizens increase and couples choose to have fewer or no children. No evidence exists to suggest that the average household size in Gainsborough or West Lincoln will decline towards that of Ontario or Niagara Region, and the past trend of higher average household size is anticipated to continue. It has been estimated that in the Niagara Region, the number of persons per household will decline from 2.6 in 1986 to 2.5 in 2001. In West Lincoln, household size is projected to change from 3.3 to 3.2 over the same period (Morehouse Economic Planning Consultants 1987).

It is difficult to predict future ethnic structure as it is dependent upon world events and Canadian immigration policy. With a relatively stable population anticipated in the future in Gainsborough and limited growth in West Lincoln, a shift in the ethnic composition is unlikely. The existence of the Dutch and Greek communities in the area may serve to attract immigrants from these countries, or result in some in-migration from other parts of Ontario, but the numbers are likely to be small.

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[1] A discussion of agriculture in the local community is found in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.

Similarly, any change in religious composition is likely to occur through population growth. The projected stable population in Gainsborough and limited growth in West Lincoln will likely preclude any significant shifts in religious composition.

Only limited trend data are available for average household income in two of the three study areas. In Ontario, average household income has increased in absolute terms but decreased in real terms (due to inflation) between 1980 and 1984. However, incomes may have increased in real terms in 1985 (Lindsay 1986, 15-17). It is probable that a similar trend has occurred in the three study areas. In addition to losses due to inflation, growth in income for those employed in the agricultural sector may have lagged behind due to low prices for farm produce. It is too early to say whether a trend in increasing incomes is establishing itself in Ontario or in the three study areas. It is likely that whatever the trends, income in Gainsborough and West Lincoln will lag behind Ontario's average household income, as has happened in the past.

Home ownership has traditionally been the dominant form of tenure in Ontario and this is reflected in all three study areas. The higher proportion of home ownership in Gainsborough and West Lincoln relative to the Region is typical of rural-agricultural areas where housing costs tend to be lower than in urban areas, placing home ownership within reach of a larger segment of the population. There is no indication that the cost of rural homes is moving towards that of urban homes or that residents' preference in tenure is changing. Home ownership will likely continue to dominate in all three study areas, with the proportion significantly higher in Gainsborough and West Lincoln as a whole.

While trend data are limited, residents of the three study areas have historically remained at the same address longer than residents in Ontario as a whole. Residents of rural areas generally tend to be less mobile than those of urban areas. As well, a large segment of the labour force commutes between communities in the Region which may contribute towards a longer length of residence than is found in Ontario as a whole.

Changes in length of residence would be influenced by in-migration and out-migration. While some out-migration is anticipated as residents entering the labour force leave to seek employment outside the Region, and some in-migration may occur particularly to the rural areas as people seek a rural lifestyle, limited change in population is anticipated, as noted above. Residents of the three study areas will likely continue to exhibit lengths of residence greater than those of Ontario as a whole.

The level of education has increased in all three study areas, as it has in Ontario. The trend to higher education is expected to continue in Ontario as higher levels of education become prerequisite and provide greater assurances of employment. This will probably be reflected in the three study areas. However, the level of education attained by residents of Gainsborough and West Lincoln will likely lag behind that of Ontario, as it has in the past.

7.3.2 EMPLOYMENT[1]

Observed trends in employment include a decrease in the number of persons in primary occupations (this category includes farming, agribusiness and horticulture) in the three study areas, accompanied by increases in management/administration, medical/health, technical/social/religious, clerical and service occupations. This trend can be attributed in part to increased mechanization, farm consolidations and part-time farming as well as a growing importance of service industries in the economy (Lindsay and McKie 1986, 2). In Niagara Region, the heavy industry sector (which has been a major employer) has experienced a decline in recent years, although it still provides a significant portion of employment. As an example of the decline, there has been an approximate 50% decrease in local United Steelworkers of America membership over the past decade as several employers have down-sized or closed.[2]

In Gainsborough and West Lincoln, it is expected that further mechanization and farm consolidation will continue, resulting in a decline in agricultural employment, although the decline should not be significant.[1] If the industrial park in Smithville is successful in attracting industry, the share of employment in this sector will increase somewhat. However, the agricultural sector will remain the major employer.

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[1] A discussion of trends in employment can be found in Morehouse Economic Planning Consultants. Site Assessment, Phase 4B: Economic Impact, 1987, and Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture, 1988.

[2] Interview with Connie Tirone, United Steelworkers of America official, May 6, 1987.

The observed decline in primary occupations and increases in the management/administration, medical/health, technical/social/religious, clerical and service occupations is expected to continue in the near future at the Regional and West Lincoln Township levels.

In the Niagara Region, a continued decline in employment in heavy industry is expected (Morehouse Economic Planning Consultants 1987). Coupled with an estimated current unemployment rate of about 12%, one could expect the unemployment level to remain relatively high.[2]

7.3.3 LAND USE/SERVICES

The West Lincoln Official Plan establishes the Municipality's vision of its future growth and development. The Official Plan policies support agriculture as the dominant land use in the rural areas with most urban development to be directed to Smithville. Some limited development, primarily residential, is envisioned in the existing hamlets. Hence, Gainsborough and West Lincoln are expected to remain as rural-agricultural communities; only moderate expansion of the industrial sector of the economy is expected in the Official Plan.

Contacts with various community and recreational facilities in the Gainsborough and West Lincoln areas have not revealed any significant future plans.

There are no plans for new development in Gainsborough or West Lincoln (Leon Kentridge Associates Ltd. 1988). The provision of municipal water and sewage services (anticipated for late 1988) will facilitate further growth and development in Smithville.

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1. Future trends in agriculture are discussed in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.
2. Interview with Connie Tirone, United Steelworkers of America official, May 6, 1987.

7.3.4 SOCIAL CONDITIONS

The high level of home ownership and greater proportion of population residing in their homes for more than 10 years indicate a relatively stable community. As noted earlier, those two characteristics are anticipated to remain unchanged and the area is expected to remain relatively stable.

Residents interviewed in Phase 4B expressed satisfaction with the rural characteristics of their community. The support provided to the rural-agricultural nature of the community by the West Lincoln Official Plan, and the anticipation of limited growth and development will assist in preserving the attributes valued by the residents. Their satisfaction with the community is likely to remain high.

7.4 SUMMARY

Gainsborough and West Lincoln Township are primarily rural-agricultural in character and this is expected to change very little in the future. Growth in the rural area is predicted to be slow but stable. Much of the growth will be in the form of rural non-farm development which the Township hopes to channel into the existing hamlets.

The community, particularly the farm community, is very stable as indicated by the lack of mobility, high percentage of owner-occupied dwellings, large families and close social and family ties. Fewer but larger farms are expected, resulting in a limited decline in the proportion of farm population. Agriculture will remain the predominant economic activity.

No reason is foreseen for any of the existing land use or demographic trends noted above to change dramatically. One can expect Gainsborough, West Lincoln and Niagara Region to remain much as they are today.

7.5 FUTURE SCENARIO: VINELAND/PELHAM/LINCOLN (ACCESS ROUTE)

Due to the limited availability of data, development of a future scenario for this area is constrained. Trends cannot be firmly established as the information upon which to base them is lacking. As information regarding past trends is limited, present conditions and future expectations are discussed together.

The population of Vineland peaked in 1976, and declined between 1976 and 1981 (Table 7.1). Census data for the years 1971, 1976, and 1981 indicate a declining trend in the proportion of children under 19 years of age in the population of Vineland (Table 7.16). Information for the same period indicates an increase in the proportion of the population over 65 years of age. Similar trends have occurred in Niagara Region and Ontario (Tables 7.4 and 7.5). However, the proportion of senior citizens in Vineland is significantly higher than in the rest of the Niagara Region or Ontario. Approximately 8% of the population in Vineland belongs to farm households; the remaining 92% are non-farm. In Ontario, only 3% of the population belongs to farm households (Table 7.5).

Table 7.17 contains data relevant to the following discussion of the population characteristics of Vineland. An increase in number of households is evident between 1971 and 1976; the number of households remained stable between 1976 and 1981. The average number of persons per household has declined between 1971 and 1981; this is a trend similar to those in Niagara Region and Ontario.

The predominant ethnic groups are British (37%), German (23%) and Dutch (13%). A much higher concentration of residents with Dutch and German backgrounds live in Vineland than is the case for Ontario's population. The majority are Protestant (77%). It should be noted that a high proportion of this group belong to the variety of Mennonite churches in the area (20%). The United and Roman Catholic affiliations are also important in Vineland. Average income in 1981 was $23,305.

TABLE 7.16
POPULATION STRUCTURE - VINELAND

	1981				1976		1971	
Age Category	FARM[1]	NON-FARM	TOTAL #	%	#	%	#	%
Pre-Schoolers 0-4[2]	85	765	155	5.8	200	7.0	235	8.5
School Age 5-19[2]			695	26.0	760	26.6	795	28.6
Adults 20-64	120	1305	1425	53.3	1480	51.9	1410	50.7
Seniors 65+	20	380	400	15.0	410	14.4	340	12.2
Totals	225 (8.4%)	2450 (91.6%)	2675		2850		2440	

Source: Statistics Canada. 1971, 1976, 1981 Census of Canada

Notes:

1. Population structure is differentiated as farm/non-farm only for 1981 data
2. Farm and non-farm data (1981) categorizes these age groups together under 'less than 15'

TABLE 7.17
POPULATION CHARACTERISTICS - VINELAND

	1981		1976		1971	
	#	%	#	%	#	%
Number of Households	860		865		790	
Average Household Size	2.9		3.3		3.4	
Ethnic Composition						
British	925	36.9				
Dutch	325	13.0				
German	585	23.4	not		not	
French	75	3.0	available		available	
Ukrainian	90	3.6				
Other	505	20.2				
Religious Composition[1]						
Catholic	380	15.1				
United Church	465	18.5				
Anglican	290	11.5	not		not	
Other Protestant	1175	46.7	available		available	
Eastern Orthodox	25	1.0				
Jewish	0	0.0				
Eastern Non-Christian	0	0.0				
Other	0	0.0				
No religious preference	180	7.2				
Detailed Religious Composition						
Anglican	295	11.7				
Baptist	95	3.8				
Christian Reformed	195	7.7				
Churches of Christ Disciples	35	1.4				
Greek Orthodox	20	0.8	not		not	
Jehovah's Witnesses	5	0.2	available		available	
Lutheran	60	2.4				
Mennonite	510	20.2				
Pentecostal	75	3.0				
Presbyterian	65	2.6				
Roman Catholic	310	12.3				
Ukrainian Catholic	80	3.2				
United Church	465	18.4				
No Religious Preference	180	7.1				
Ignore	135	5.4				

1. A more detailed table of religious composition follows; this table allows comparison with West Lincoln and Niagara data.

TABLE 7.17: POPULATION CHARACTERISTICS - VINELAND (cont'd)

	1981		1976		1971	
	#	%	#	%	#	%
Tenure						
Owned	660	76.7	645	75.4	560	72.3
Rented	200	23.3	210	24.6	215	27.7
Length of Residence						
less than 1 year	75	8.9				
1-2 years	110	12.9				
3-5 years	110	12.9	not available		not available	
6-10 years	150	17.5				
more than 10 years	410	48.0				
Education (age 15 and over)						
Elementary or some elementary	335	16.8	620	28.1		
Secondary or some secondary	915	45.9	965	43.8	not available	
College or some college	470	23.6	280	12.7		
University or some university	275	13.8	340	15.4		
Average Household Income	$23,305		not available		not available	

Source: Statistics Canada. 1971, 1976, 1981 Census of Canada

In terms of tenure, 77% of dwellings are owned, 33% are rented. The proportion of owned dwellings in Vineland increased between 1971 and 1981. During the same period, the proportion of dwellings owned remained relatively stable in Niagara Region and Ontario. Census data for 1981 indicate that 48% of residents had lived in their homes for more than 10 years; for Niagara Region and Ontario, these values were 37% and 30%, respectively.

The level of education has increased between 1976 and 1981 in Vineland, Niagara Region and Ontario (Table 7.17, 7.8, 7.9). The adults in Vineland have attained a level of education slightly higher than those of Niagara Region and slightly lower than those of Ontario.

In terms of labour force participation rates, Table 7.18 indicates an increase between 1976 and 1981. Over the same period, the unemployment rate has risen as well. No trend data are available for occupation, but Table 7.18 does provide this information for 1981. The majority of the population in Vineland are employed in primary (farming, horticulture, agribusiness), manufacturing, sales, service and clerical occupations. A significantly higher proportion of Vineland's population (20%) is engaged in primary occupations as compared to Niagara Region (4%).

As of September 1987, a total of 346 new housing units have been approved in Vineland; an additional 195 have been proposed. Several of these are to be located on Regional Road 24 or in its vicinity. Many of the proposed housing units are associated with Short's Heritage Village, which in Phase One will consist of 12 single-family and 280 multi-family units on a 15.5 acre site. Phase 2 is expected to be similar in terms of size and density (Leon Kentridge Associates 1988). By completion, this 'leisure community' could house 1,000 to 1,500 people, (largely retired persons) and include a nursing home/senior citizen complex and shopping centre. Heritage Village could have implications in terms of the age structure of the population, and possibly for shopping patterns and travel behaviour in the area. Construction of Heritage Village has commenced.

TABLE 7.18
EMPLOYMENT - VINELAND

Labour Force Activity	1981	1976	1971
Population - 15 years and over	1960	2205	2105
In labour force - employed	1170	1275	1140
In labour force - unemployed	50	50	60
Average Participation Rate	62.2	60.1	57.0
Average Unemployment Rate	4.1	3.8	5.0

Source: Statistics Canada 1971, 1976, 1981 Census of Canada

TABLE 7.18: EMPLOYMENT - VINELAND (cont'd)

Occupation	1981 #	 %
All occupations	1230	100.0
Not applicable	25	2.0
Not stated	35	2.8
Managerial, administrative and related occupations	30	2.4
Teaching and related occupations	30	2.4
Medicine and health	25	2.0
Technological, social, religious, artistic and related occupations	85	6.9
Clerical and related occupations	120	9.7
Sales occupations	140	11.3
Service occupations	125	10.1
Primary occupations (includes farming, horticulture and animal husbandry)	235	19.0
Other primary occupations	10	0.8
Processing occupations	50	4.0
Machining, product fabricating, assembling and repairing occupations	155	12.5
Construction trades occupations	95	7.7
Transport equipment and operating occupations	30	2.4
Other	50	4.0

Source: Statistics Canada. 1981 Census of Canada

Balls Falls Conservation Area (to the south of Vineland) may undergo some expansion of its facilities and programs. Adjoining properties may be acquired, and there is a possibility that the 'Maple Syrup Days' event may be moved to this conservation area. A primary education centre and formal bus tours are future options also being examined. Vineland Pentecostal Church has indicated that it may become involved with the Heritage Village development, while the Vineland Missionary Church has long-range plans for a senior citizens complex, which if developed, would contribute to an older population age structure.

The remaining southern portion of Lincoln Township is expected to remain basically rural and agricultural in nature. The Town of Pelham is experiencing some population growth in Fenwick as a result of small approved subdivisions, with only minimal growth occurring in the rural north Pelham area. It is likely that this trend will continue so that changes between 1987 and the year 2000 will be minimal. Fenwick, Fonthill, and the rest of Pelham will in all likelihood continue to attract commuters from larger urban centers in the Niagara Region.

CHAPTER 8

POSSIBLE SOCIAL IMPACTS ASSOCIATED WITH THE OWMC FACILITY

8.1 INTRODUCTION

As a result of the public consultation carried out in Phase 4B and in previous phases, a review of relevant case studies, and visits to facilities with waste treatment technologies similar to those proposed by OWMC, a number of issues and concerns commonly held by residents near hazardous waste management facilities became apparent. Table 8.1 documents these in some detail. A number of these issues and concerns are being addressed in studies undertaken by other consultants (Ontario Waste Management Corporation 1987 and 1988). Some of these analyses (e.g., studies of risk, noise, visual and lighting impacts, dust, odour and agricultural impacts) also provided inputs to the social analysis. Table 1.1 in Chapter 1 describes the areas of responsibility of the consultants for the Phase 4B site assessment and Table 4.1 in Chapter 4 identifies the relationship of the social impact assessment with the other Phase 4B studies.

This report deals with both standard and special social impacts.[1] Standard social impacts are the direct and indirect results of changes in the environment brought about by the construction and operation of the OWMC facility. These include the displacement of residents from the site itself and its immediate vicinity; nuisances such as odour, dust and noise; construction impacts; and potential changes in the demand for community and recreation facilities. In the past, most social impact analyses have focussed on standard impacts, and a variety of methods have been developed to predict them.

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[1] Standard and special impacts are discussed in detail in Chapter 3.

TABLE 8.1
ISSUES AND CONCERNS RELATED TO HAZARDOUS WASTE MANAGEMENT FACILITIES

- visual intrusion
- effects on environmental quality
- effects on human health and future generations
- groundwater quality
- damage to vegetation (gardens, natural areas, landscaping)
- odours, dust, smoke, and noise from both the facility itself and trucks associated with it
- accidents and spills involving waste-laden trucks
- interference from waste-laden trucks with pedestrians, farm equipment, regular traffic (including school buses) and access to properties adjacent to the access route
- problems with keeping trucks on designated access routes
- increased wear and tear on access roads
- possible structural damage to buildings or services along access routes
- property value reduction and subsequent loss of financial security
- inability to sell properties in site vicinity
- loss of business
- negative effects on local economy
- agricultural impacts - contamination, reduced production or quality of crops, livestock, dairy products
- loss of agricultural land
- loss of market for locally-produced agricultural products
- accidents on-site
- possible cover-up of accidents on-site
- concern over provisions for emergency response

TABLE 8.1 (cont'd)

- feeling that political and economic considerations dominated site selection
- lack of confidence in Ministry of the Environment regulation and enforcement
- concerns about monitoring - of what, by whom, for how long, etc.
- need for adequate compensation for impacts experienced by residents and the community
- feeling of unfairly bearing the burden of a larger societal problem
- concern about poor relations between OWMC and the community
- out-migration of residents from the community
- the development of rifts within the community due to OWMC
- stigma effect on the community
- impacts on community and recreation features due to disruption of operations or out-migration
- attraction of industry to the area
- loss of resident satisfaction with the community
- change in the character of the local area
- reduction in the quality of life
- uncertainty resulting in cancelled or postponed plans
- social and psychological effects, including stress
- disruption of ancestral, familial and social ties for out-migrating residents
- economic, social and psychological effects on out-migrating residents
- disruption of day-to-day activities

Special impacts result from perceptions of the facility or the risk associated with the facility; thus they are largely subjective in nature. However, this does not detract from their significance. All of the existing methodologies and models for predicting and measuring social impacts associated with waste management facilities deal only with standard impacts; few of the methodologies or models attempt to cover any of the special impacts (Cluett et al. 1979, 118).[1] The "special social impacts are not well understood, are not easily predictable, and can be extremely difficult to manage or prevent" (Cluett et al. 1979, 124).

In Phase 4A, a set of factor groupings and related factors were developed as a framework for the social analysis. The term 'factor groupings' describes who or what is affected, while 'factors' describe the type of changes that may occur. The Phase 4A factors were reviewed and refined, and additional factors developed to allow a level of analysis appropriate in Phase 4B. The essential difference between these two phases is that Phase 4A compared the relative merits of the candidate sites, while in Phase 4B the task was to evaluate the impact of the OWMC facility on the preferred site. Table 8.2 compares the factors used in Phase 4A with those used in Phase 4B. Although in many cases the factors used in the two phases are the same, the level of analysis generally was more detailed in Phase 4B.

As indicated in Table 8.2, social impacts can be manifested on three levels: as impacts on individuals, the community as a whole, and on community and recreation features. These three levels correspond to the factor groupings used in this study. Within these different levels or factor groupings are a number of factors that describe the type of changes that might occur; the status of the factors as representing standard or special impacts is indicated in Table 8.2. A brief discussion of the various factors used in the Phase 4B analysis is provided below for each of the three factor groupings.

These factor groupings and factors provide a framework for the discussions of social impact in Chapter 9 (Standard Impacts) and Chapter 10 (Special Impacts).

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[1] While studies of special impacts have been done 'after the fact' (e.g., Three Mile Island), few, if any, predictive methodologies have been developed.

TABLE 8.2
COMPARISON OF PHASE 4A AND 4B FACTORS[1]

	PHASE 4B	PHASE 4A
FACTOR GROUPING: IMPACTS ON RESIDENTS		
Factors:		
Displacement[2] (standard)	•	•
Disruption of Day-to-Day Activities and/or the Use and Enjoyment of Property (standard)	•	•
Satisfaction with Community[3] (special)	•	•
Stress (special)	•	
FACTOR GROUPING: IMPACTS ON COMMUNITY AND RECREATION FEATURES		
Factors		
Displacement[4] (standard)		
Disruption of Operations (standard)	•	•
FACTOR GROUPING: IMPACTS ON COMMUNITY AND REGION		
Factors:		
Community Stability[5] (special)	•	•
Community Cohesion[6] (special)	•	•
Community Character (both standard and special)	•	•

Notes:

1. Each factor has been identified in parentheses as to whether it contributes to the Phase 4B analysis of standard impacts or special impacts.
2. Resident displacement along the access route will not be required. There is a possibility that the household at location #75 may be displaced by the Schram Road realignment; however, a decision in this regard has not yet been made. In Phase 4A, displacement of residents along the access road was screened from the analysis.
3. This factor was screened from the Phase 4A analysis as data gathered were similar across all sites and therefore were not useful for comparison.
4. This factor was screened from the analysis in Phase 4A as the characteristics of any on-site features were such that displacement impacts could be mitigated; in addition, information on potential access routes confirmed that no such impacts would occur. In Phase 4B, there are no community and recreation features on-site or along the access route that would be displaced.
5. Community stability was referred to as social stability in Phase 4A.
6. Community cohesion was referred to as social cohesion in Phase 4A.

8.2 FACTOR GROUPING: IMPACTS ON RESIDENTS

8.2.1 FACTOR: DISPLACEMENT

The development of the hazardous waste management facility will result in the displacement of residents who live on-site.[1] These residents may experience social effects: for example, they may lose or strain ties to their friends, families and community; and they may experience stress and anxiety at the disruption of their way of life. The significance of these hardships will vary among individuals depending on variables such as age, length of residence, and attachment to place.

The degree of impact that will be experienced by displaced residents is not readily predicted. It will be influenced by how far the residents move (i.e. whether they can relocate within the community or within reasonable distance of their relatives and friends), the adequacy of compensation (i.e. perceived fairness and equity of the compensation), and the timing of both relocation and compensation.

8.2.2 FACTOR: DISRUPTION OF DAY-TO-DAY ACTIVITIES AND/OR THE USE AND ENJOYMENT OF PROPERTY

This factor relates to the possible disruptions experienced by residents in the vicinity of the site or along the access route. Daily activities and/or the use and enjoyment of their property may be affected by nuisances such as dust, noise, odour, reduced accessibility, or visual intrusion of the facility. Both measurable and perceived disruptions will be examined.

8.2.3 FACTOR: SATISFACTION WITH THE COMMUNITY

The siting of a hazardous waste management facility in or near a community may cause some residents to feel less satisfied with their community as a place to live. As a result, these residents may choose to withdraw from community activities or from the community itself, both of which may lead to social impacts (i.e. loss of friendship ties) and both of which have implications for community stability and cohesion.

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[1] It is possible that the household living at location #75 (10-103) will be displaced if Schram Road is realigned.

It was possible to obtain an estimate of the number of residents who say they will be less satisfied with their community if the facility is built in West Lincoln. However, it is much more difficult to arrive at an overall assessment of the significance of this effect because of the uncertainty as to how individuals and households will respond following the construction and operation of the facility. These responses may be substantially influenced by OWMC impact management strategies, which as of yet are not finalized.

8.2.4 FACTOR: STRESS

Stress is a particularly unusual factor in that it is highly individualized in terms of whether or not an event causes stress and how people react to or are affected by stress. Stress results from the perception or appraisal of a situation as threatening some kind of danger, harm or loss, and the emotional, mental, behavioral and biological responses to the threat. The actual threats are less important than what residents perceive will occur. The overall site selection process, the announcement of the preferred site, technology selection and general policies related to waste management have caused stress for some individuals to date. As well, the actual construction and operation of the OWMC facility has the potential to cause stress in individuals who have fears or concerns about the long-term effects and overall operation of the facility.[1]

In this study the concern is with the social impacts resulting from individual and household behaviour in response to the siting process and ultimately to the development of the facility (i.e. the likelihood that households move out of the community).

The individual health-related responses to stress, both psychological and biological, are not addressed in this social impact study. Their assessment is beyond the mandate of this study and would require additional studies to be undertaken.

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[1] Risk-related issues are addressed by Environ Corp. Phase 4B. Site Assessment: Risk Assessment. 1988.

8.3 FACTOR GROUPING: IMPACT ON COMMUNITY AND RECREATION FEATURES

8.3.1 FACTOR: DISPLACEMENT

As there were no community and recreation features on-site, this factor was screened from the analysis in Phase 4B.

8.3.2 FACTOR: DISRUPTION OF OPERATIONS

This factor relates to the potential disruption of the operation of existing or proposed community and recreation features in the vicinity of the site and along the access route. These features include recreation and cultural facilities, community meeting places, cemeteries, and any other service or facility that could be affected by facility operations. The concern is with the potential impact of a change in demand for the service or facility as well as a change in the quality of the service or facility itself.

Disruption of community and recreation features located in the local community may occur in two ways. First, the displacement and potential voluntary out-migration of local residents may result in a decline in the use of services and facilities.[1] Second, the operations of certain community and recreation features may be negatively affected by changes in noise levels, dust, odour, truck traffic or other environmental changes caused by the waste management facility. This may result in a loss of operational effectiveness of the service or facility, which in turn could lead to a loss in demand. The proximity of the feature to the site or access route may also be seen to detract from the attractiveness or image of the service or facility, and this could result in the same effect.

Few standards specifying a required level of environmental quality for community and recreation features exist. The assessment of disruption due to environmental impact will be based on expert opinion and the subjective evaluations of owners/operators. Estimates of the anticipated changes in levels of use will be based on input from the owners/operators of the features and residents participating in the Phase 4B intervew who report using them.

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[1] The in-migration of construction or operational workers is not anticipated to have an effect on local facilities, as the majority of workers will commute (Morehouse Economic Planning Consultants 1987). In-migration is discussed in greater detail in Section 10.5.

8.4 FACTOR GROUPING: IMPACTS ON COMMUNITY AND REGION

8.4.1 FACTOR: COMMUNITY STABILITY

Community stability is a measure of a community's inclination to change and/or to maintain social continuity. This continuity can be disrupted if there is a significant change in the community's population or in social institutions which maintain and promote the community's goals and values. The concern is with the ability of a community to deal with change in a way that maintains or enhances its social and cultural characteristics. The potential change in population, commitment of individuals or groups, and aspirations concerning future change in the community will be considered.

The development of the OWMC facility has the potential to cause the local community to become unsettled. In anticipation of, or in response to, negative changes in the community's physical environmental or social system, residents or owners of community and recreation features may become unwilling to invest their effort, time and money in the community and may decide to move out of the community altogether. This may potentially result in the discontinuation of relationships, interactions and activities which help to maintain the community's social system. Impact management strategies may play a major role in minimizing changes in community stability.

8.4.2 FACTOR: COMMUNITY COHESION

Community cohesion refers to both the amount and quality of social relations and interactions within a community, and the attraction to or identification with the community. Cohesion is indicated by the extent of use of local facilities, participation in community activities, commitment and satisfaction with community, and the extent of neighbouring among residents.

A hazardous waste management facility can change the cohesiveness of the local community in a number of ways:

- displacement and voluntary out-migration of residents. If people leave the community there may be a loss of friends and relatives for those left behind. There is also a potential loss of community group members or leaders.

- the type of facility and its nuisance or risk impacts may reduce the community's attractiveness to residents. Some residents may become less satisfied with the community as a place to live, and their involvement in the community (formally or informally) may decline or cease altogether.

- disruption of community facilities that contribute to social cohesion. Such facilities may become less attractive to residents, who could cease to use them, and in the most severe circumstances result in a loss of facilities that contribute to community cohesion. Alternatively, the loss of residents may affect the viability of local facilities, particularly those which serve as meeting places (formal and informal) for residents.

- Community members might band together to achieve a common goal, i.e. oppose or negotiate with OWMC. As a result, community cohesion could increase.

- Groups within the community may disagree about the facility, with negative implications for community cohesion.

8.4.3. FACTOR: COMMUNITY CHARACTER

This factor relates to the distinctive qualities of a community, which can be physical (land-use, geographic or environmental features), socio-cultural (population characteristics, way-of-life, shared values and perspectives), and economic (type of industrial and business activities) in nature. The unique character or image of a community is a function of a combination of these qualities. It should be noted that there is no single universally accepted definition of community character.

The development of a hazardous waste management facility may change the character of the local community as a direct result of the environmental impacts it may cause, or indirectly as a result of induced changes in the physical, socio-cultural and economic qualities of the community that contribute to its character.

8.5 RELATIONSHIPS AMONG THE SOCIAL FACTORS

There are direct and indirect relationships among many of the factors. One impact can affect another, or the individual or collective responses of residents to a social impact can have implications for other social effects. As an example, the disruption of the use and enjoyment of property (because of nuisance impacts of the facility such as noise, dust or visual intrusion) could lessen some residents' satisfaction with the community as a place to live. A decrease in satisfaction could, if significant enough, lead to a decision to move from the community which in turn could have repercussions for the community's stability and cohesion. Should significant out-migration occur and some of their friends and relatives leave, the residents remaining could become dissatisfied with the community. This could lead to them being less active in the community and affect community cohesion.

The links among the social factors are considered in this social impact assessment. For example, in Chapter 10, 'Special Impacts', the implications of residents moving from the local community (because of disruption to their use and enjoyment of property, loss of satisfaction with the community and/or perceptions of the risks posed by the OWMC facility) for the community's stability and cohesion are assessed.

Table 8.3 documents the relationships between and amongst the social factors.

TABLE 8.3
RELATIONSHIPS AMONG THE SOCIAL FACTORS

Factor	Links	Relationship
Displacement of Residents	•Community Stability	•Stability potentially affected through the loss of displaced residents from the community.
	•Community Cohesion	•Cohesion potentially affected through the loss of friends and/or relatives, community group members and/or leaders.
	•Community Character	•Demographic character of the community could change if enough residents are displaced or if displaced residents share distinct characteristics.
	•Disruption of Operations (of Community and Recreation Features)	•Viability of operations potentially affected if displaced residents leave the community (resulting in a change in demand for services).
Disruption of Day-to-Day Activities and/or Use and Enjoyment of Property	•Satisfaction with Community	•Residents may become dissatisfied with the community as a place to live, if their use and enjoyment of property is disrupted.
	•Community Stability •Community Cohesion	•If disruption is great enough, residents could leave the community, potentially severing relationships, interactions and activities which help maintain the community's social system.
	•Stress	•Disruption of use and enjoyment of property could lead to stress in some individuals.
Disruption of Operations (of Community and Recreation Features)	•Community Cohesion	•Cohesion potentially affected if the viability of community and recreation facilities is diminished (e.g., through a change in demand for services).
Community Stability	•Community Cohesion	•Facility-related out-migration or in-migration could result in a change in relationships, interactions and activities which help maintain the cohesiveness of the community.
	•Disruption of Operations (of Community and Recreation Features)	•the loss of residents through displacement and voluntary out-migration or in-migration of OWMC employees could lead to a change in demand for community and recreation features.
	•Community Character	•Facility-related out-migration or in-migration could lead to a change in the character of the community.
Community Cohesion	•Disruption of Operations (of Community and Recreation Features)	•Should residents decrease their community involvement/use of facilities or cease to use facilities, the viability of some community and recreation features could be affected.
	•Satisfaction with Community	•A change in community cohesiveness, for exampl the loss of friends and/or relatives, could diminish the satisfaction of residents with the community as a place to live.

Stress	•Satisfaction with Community •Community Stability •Community Cohesion	•Residents experiencing stress attributed to the facility could become dissatisfied with the community. Depending upon their response to this stress (e.g., out-migration, or withdrawal from the community) stability and cohesion could be affected.
Community Character	•Satisfaction with Community	•A change in community character including attributes valued by residents; (e.g., visual character, peace and quiet) could diminish residents' satisfaction with the community as a place to live.
	•Community Stability •Community Cohesion	•Resident dissatisfaction, in turn, could affect stability and/or cohesion as noted under Satisfaction with Community.
Satisfaction with Community	•Community Stability •CommunityCohesion	•Dissatisfied residents could choose to leave or withdraw from the community, thereby potentially affecting community stability and cohesion.

CHAPTER 9

STANDARD SOCIAL IMPACTS

9.1 INTRODUCTION

This chapter documents the assessment of the standard impacts associated with the proposed facility.

As noted in Chapter 3, standard impacts are the direct and indirect result of changes in the environment that will be brought about by the construction and operation of the OWMC facility. The particular standard impacts experienced will be dictated to a large extent by the nature of the facility, its construction and its operation, as well as the characteristics of the area and of the residents who live near the site.

This chapter is organized in the following manner. The factors relevant to the assessment of standard impacts are discussed in Section 9.2. Section 9.3 documents the data inputs provided by other consultants and the approach taken in the assessment. The analysis and evaluation of the standard impacts are documented in Sections 9.4 to 9.8. The conclusions for the assessment of standard impacts are presented in Section 9.9.

9.2 RELEVANT FACTORS

In this section, the characteristics of the proposed waste management facility are described briefly in order to provide a basis upon which to discuss the types of standard impacts which could be associated with the facility;[1] the factors relevant to the analysis of the standard impacts are then identified.

The proposed facility is comprised of five components: a landfill, an incinerator with a stack, a physical-chemical treatment plant, a solidification plant with an evaporator stack, and a laboratory/administration area. Trucks will deliver waste materials as well as other materials used in the treatment process; most of the trucks will travel along a designated access route. Excavated material from the landfill area will be trucked from the site. The operation of the components noted above, the truck movements, construction of the facility and expropriation or purchase of properties to develop the facility will create standard impacts. Three categories of standard impacts have been identified for the proposed facility: displacement of residents, disruption effects of nuisances associated with the facility development and operation, and potential change in demand for community and recreation features. The relevant factors to be considered are:

Impacts on Residents
- Displacement
- Disruption of Day-to-Day Activities and/or the Use and Enjoyment of Property

Impacts on Community and Recreation Features
- Disruption of Operations due to nuisance impacts and to potential change in demand due to displacement, movement of residents and in-migration of facility employees.

Impacts on Community
- Community Character

These factors have been discussed briefly in Chapter 8 and are elaborated on in the appropriate sections of this Chapter.

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[1] For more detailed information regarding facility characteristics, refer to Monenco Ltd. Site Assessment, Phase 4B: Facility Characteristics. 1988. A summary of facility characteristics is provided in Ontario Waste Management Corporation. Environmental Assessment, Volume V: Site Assessment.1988.

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Impacts on Residents
- Displacement
- Disruption of Day-to-Day Activities and/or the Use and Enjoyment of Property

Impacts on Community and Recreation Features
- Disruption of Operations due to nuisance impacts and the potential change in demand due to displacement, movement of residents and in-migration of facility employees.

Impacts on Community
- Community Character

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[1] For more detailed information regarding facility characteristics, refer to Monenco Ltd. Site Assessment, Phase 4B: Facility Characteristics. 1988. A summary of facility characteristics is provided in Ontario Waste Management Corporation. Environmental Assessment, Volume V: Site Assessment.1988.

9.4 DISPLACEMENT

A standard, or direct, impact of the development of the proposed OWMC facility will be the displacement of residents. This section addresses the potential hardships that residents might experience as a result of displacement.

The discussion that follows documents the type of impacts, or hardship, that displaced residents could encounter, and the factors that can influence the degree of impact they experience. Following this overview, the discussion focusses on those residents who will be displaced.

The displaced residents are considered in terms of number, characteristics and other factors that could influence the degree of impact experienced. Information on resident characteristics is taken from the resident interviews. The final portion of this discussion focusses on the impact management strategies recommended to minimize the degree of impact. The discussion draws upon concerns expressed by nearby residents and others in the community, impact management measures suggested by residents, and impact management measures employed elsewhere.

The relocation of residents as a result of the OWMC facility can have effects on three different levels. The first level, effects on the residents who must move, is the focus of this section. The loss of these residents can affect the local community (the second level) and community and recreation features (the third level) in the area; the former are addressed in Chapter 10, 'Special Impacts'. Effects on community and recreation features are dealt with in Section 9.7, 'Change in the Demand for Community and Recreation Features', and in Chapter 10. The impacts on community and recreation features examined in Chapter 10 focus on the effects related to special impacts; in Section 9.7 the emphasis is on effects related to resident displacement and the loss of residents most severely affected by nuisance impacts.

Another potential direct impact of the proposed OWMC facility would be the displacement of community and recreation features. No community or recreation features are located on the preferred site. Two of the dwellings on-site were identified in Phase 4A as having potential heritage significance. The Phase 4B heritage assessment of these two residences found that neither is of unique historic or architectural significance (Historica Research Limited 1988). Consequently, the factor, displacement of community and recreation features, was screened from the analysis.

9.4.1 IMPACTS ASSOCIATED WITH DISPLACEMENT OF RESIDENTS

A number of potential impacts are associated with the displacement of residents, including (Colony 1972, 12-26; Finsterbusch 1980, 119; Heller 1982, 482; Johnson and Burdge 1974; Love 1978, 4):

- time, energy and money devoted to finding new housing;
- disruption of social ties (e.g., with friends and relatives, involvement in the community);
- disruption of established social patterns;
- psychological stress;
- change in accessibility to work, shopping, recreation, etc.;
- changes in housing conditions;
- change in tenure;
- alienation in the new community;
- economic hardship.

Displacement of residents has long been accepted as a major, if not the most significant, social impact of development projects. This is justifiably so, as not many events are more disruptive than being forced out of one's home. Ordinary daily routines change, even if only slightly, and many close and friendly relationships can be affected. For many long-time residents, relocation may mean separation from familiar and valued settings and the close social ties experienced in these settings. Some people suffer considerably from relocation, particularly when it is perceived as being forced (Finsterbusch 1980, 119).

The degree of impact experienced by an individual will depend upon his/her characteristics, ties to home and community (attachment to place), satisfaction with community, and place of relocation. External considerations, including the compensation and other means of assistance provided, and the treatment received from the expropriating agency, will influence the degree of impact.

Research in the field of social impact indicates that hardship associated with residential displacement is likely to be more severe among those segments of the population who, by virtue of their socio-economic characteristics and/or their ties to home and community, are less able to adapt to relocation. Populations at risk, or most likely to encounter greater hardships through displacement include the elderly, young children, homemakers, the disabled and the poor. Members of these groups are limited in mobility and/or financial resources and are likely to be more dependent on the immediate community for fulfillment of their material and social needs (Finsterbusch 1980).

Farmers and homeowners may endure greater hardship because they frequently have a strong attachment to their homes; they often experience great social and psychological loss from forced displacement (Finsterbusch 1980, 120). Farmers and homeowners also have a higher degree of "investment" in the community by virtue of the commitments they have made to a particular property.

Long-term residents and those with strong local social ties are likely to display higher levels of attachment to place: time fosters familiarity with the residential environment and allows for development of social networks. Social ties are manifested in a number of ways: membership in community groups and organizations, friends and relatives in the area, interaction with neighbours, and ancestral ties to property and the municipality. Strong social ties make it difficult for an individual to leave.

Another factor that can affect the degree of impact experienced is satisfaction with the community as a place to live. The more satisfied a resident is with their former community, the greater the degree of displacement impact experienced (Fischer et al. 1977; Finsterbusch 1980, 121-122; Heller 1982, 485-488).

Finally, one's place of relocation can influence the level of impact. Residents who move to another municipality must develop new daily patterns and establish new friends and ties with neighbours and the community, while contending with unfamiliar surroundings and the loss of old social ties. Hence they may have a more difficult time adjusting than residents who relocate within the same community (Finsterbusch 1980, 117-118; Heller 1982, 483-484).

The impacts of displacement have been assessed with these considerations in mind.

9.4.2 DISPLACEMENT OF RESIDENTS[1]

Three (3) households and five (5) residents are located on the proposed site.[2] No children live in these households; all five residents are adults.[3] Two of the three are farm households, although one is semi-retired.[4] Two households own their home and property; the other rents.[5] All the on-site residents are long-time residents of West Lincoln, having lived in the Township for more than 20 years.[6] Ancestors of one family settled in the Township approximately 200 years ago.[7]

One on-site household is very satisfied with West Lincoln as a place to live; another is neither satisfied nor dissatisfied.[8] With respect to place of relocation, one on-site household would relocate in Niagara Region; another was not sure where they would move.[9] The two on-site households interviewed in Phase 4B did not foresee or were unsure of either any problems that would make it difficult for them to move or any reasons that would make them reluctant to relocate.[10]

Concerns of on-site residents regarding relocation included compensation for the value of their property, the inconvenience of moving, relocation expenses and the stress associated with the move. Another concern was whether they could find a similar property at a comparable price.

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[1] An additional household at the southeast corner of Hwy. 20 and Schram Road (location 75; see Figure 9.1) may be displaced to allow for a realignment of Schram Road/Silverdale Road. As the realignment has not yet been confirmed this household has not been included in this assessment.

[2] Only two of the three on-site households were interviewed in Phase 4B; information on the third household, which chose not to be interviewed in Phase 4B, was supplemented by Phase 4A survey data where appropriate. The Phase 4A survey is included in the appendices to the Phase 4A Social Analysis Report (Institute of Environmental Research 1985).

[3] Phase 4B On-Site Resident Interviews, Question 100; Phase 4A Walk and Talk Interviews, Question 19.

[4] Phase 4B On-Site Resident Interviews, Question 104; Phase 4A Walk and Talk Interviews, Question 13.

[5] Phase 4B On-Site Resident Interviews, Question 4; Phase 4A Walk and Talk Interviews, Question 8.

[6] Phase 4B On-Site Resident Interviews, Question 2; Phase 4A Walk and Talk Interviews, Question 3.

[7] Phase 4B On-Site Resident Interviews, Question 6; Phase 4A Walk and Talk Interviews, Question 4a.

[8] Phase 4B On-Site Resident Interviews, Question 57 (this question was not asked in the Phase 4A Walk and Talk Interview).

[9] Phase 4B On-Site Resident Interviews, Question 60 (this question was not asked in the Phase 4A Walk and Talk Interview).

[10] Phase 4B On-Site Resident Interviews, Question 61 (this question was not asked in the Phase 4A Walk and Talk Interview).

Residents participating in the public consultation program commented that on-site residents should receive fair compensation and should be compensated for the stress and intangible costs of moving. Concern was expressed regarding the psychological and social impacts associated with involuntary moves.

9.4.3 IMPACT MANAGEMENT STRATEGY

The data available concerning the characteristics and social ties of on-site residents suggest that these households will encounter difficulties in relocation, with varying degrees of impact. It is not possible to mitigate displacement; however, a number of impact management measures and corporate responses can be implemented to alleviate the displacement impacts.

The goal of the impact management strategy should be to minimize the adverse social, psychological and economic impacts of displacement, and maximize any positive effects that may occur. In many respects, OWMC can influence the degree of impact through the level or type of compensation measures offered and the treatment of displaced residents. Based on the information available on residents' characteristics and social ties, their concerns about relocation, and research on relocation experiences elsewhere, the following measures and corporate responses are recommended:

- full compensation for value of property under the procedures of the Ontario Expropriations Act;
- payment of allowance for relocation costs (e.g., moving expenses, legal fees, survey fees, real estate fees);
- substantive assistance in finding new accommodation;
- consideration of special circumstances that would result in financial, social or psychological hardship for residents and implementation of measures to address these circumstances;
- provision for sufficient time to find a new home;
- compensation for the inconvenience and stress associated with a forced move.

OWMC has indicated that it will implement these measures (Ontario Waste Management Corporation 1988), with the possible exception of the last one. However, some of the other measures may address this issue. OWMC will also meet with on-site residents individually to discuss their needs and special circumstances, and determine ways to minimize the problems associated with moving.

As noted above, the degree of hardship experienced will vary among the households. One of the best means to reduce displacement impacts is to meet with the residents to discuss their individual needs and special circumstances, and to determine what can be done to ease the move. Individualized support services, along with other measures, have contributed to minimizing relocation effects in other instances (Heller 1982, 482). It is recommended that OWMC meet with the residents individually, a process which has in fact begun.

Throughout the process residents should be treated courteously and fairly. It should be remembered that their homes and community provide not only shelter and services but also serve social and psychological functions. These residents are being forced to leave their homes for the benefit of the general public. The treatment they receive should be cognizant of the potentially significant hardships they may encounter. It is recommended that OWMC maintain involvement in the expropriation process in order to ensure that the residents' best interests are given priority.

In summary, it is possible to compensate for the physical and economic features of one's home and community and to approach relocation in an empathetic and sympathetic manner so as to alleviate other psychological and social impacts associated with a forced move. It is not possible to compensate for all impacts; some will remain. However, it is expected that most residents who are displaced will adjust to their new homes and locations over time.

9.5 DISRUPTION OF DAY-TO-DAY ACTIVITIES

This section addresses the nuisance impacts that are associated with site development - construction activities and site operations - and the anticipated disruption that would result in residents' daily activities and/or the use and enjoyment of property and the operations of community and recreation features.

The anticipated nuisance impacts include noise, visual intrusion, dust, odour and night lighting. In the subsections that follow, each nuisance impact is assessed individually.[1] The discussions provide an overview of how each nuisance impact could disrupt the lives of residents and the operations of community and recreation features.

The nature of the nuisance impact and data availability had a bearing on the approach taken to assess each. Similarly, the assumptions applied in the assessment varied among the nuisance impacts. The approach and assumptions are documented for each nuisance impact in the appropriate subsection; the analysis and evaluation follows; finally, the opportunity for impact management is discussed.

Following the analysis of each nuisance impact, the evaluations are drawn together and an assessment of the cumulative effects of the nuisance impacts is provided in Section 9.5.6. The underlying assumption is that some households will be affected by a number of nuisances, and by virtue of the cumulative nature of the impact, experience significant impact.

9.5.1 NOISE

Introduction

The construction and operation of the proposed facility will result in increased sound levels in the surrounding area. There are three main sources of noise impacts

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1. Each nuisance impact is assessed assuming 150,000 tonnes/annum ('Year 5') typical operations. Appendix F provides a sensitivity analysis under conditions of 300,000 tonnes/annum ('Year 10') typical operations.

associated with the OWMC facility: construction, plant operation, and landfilling activities. Sources contributing to noise during the construction and site operation phases include the following:

Construction
- Equipment associated with landclearing and ground excavation;
- Delivery trucks and construction employee vehicles;
- Equipment associated with the construction of the berm, drainage ditches and the access road;
- Construction of plant and other buildings.

Landfill Operations
- Landfill equipment;
- Trucks hauling excavated clay;
- Facility employee vehicles.

Plant Operation
- Delivery trucks;
- Facility employee vehicles;
- Equipment associated with the physical/chemical treatment plant, solidification plant and incinerator, in addition to general equipment such as ventilation fans.

Noise is defined as unwanted sound. An increase in local sound levels can disrupt the day-to-day activities and/or the use and enjoyment of property of nearby residents. Similarly, increased sound levels can disrupt the operations of community and recreation features. Noise can be an annoying irritant to the listener; at high levels it can affect sleep, health and the performance of some kinds of tasks, as well as inhibit communication. At extremely high levels noise can result in physiological damage to the ear and may cause non-auditory physiological effects varying from muscular tension to headaches. The duration of excessive noise levels will also affect the degree of impact experienced.

It is not possible to make definitive statements about the noise level at which stress occurs, but other studies have noted that the threshold of the stress response is about 65 dBA and becomes more pronounced at 80 to 85 dBA (Finsterbusch 1980, 195-220), depending upon the nature of the noise.

Approach

Assessment of the noise impacts was undertaken for construction, plant operations and landfill activities.[1] The landfill and construction activities will take place during the daytime; consequently, these noise assessments relate to changes in the day-time sound environment. The plant, while operating 24 hours, will not be audible over the landfill during the daytime and the assessment of impacts was concerned with the night-time sound environment only.

A series of noise level contours, or noise impact zones, were applied to maps of residence locations and locations of community and recreation features.[2] This information, combined with data on ambient sound levels and (where available)[3] predicted sound levels at specific residence locations, was used to identify households, residents, and the community and recreation features affected by a change in their sound environment, and the magnitude of the impact (S.S. Wilson and Associates 1987).

The extent of impact was also viewed as a function of the duration of exposure to noise. The potential for homemakers, others who work at home, pre-school children and retired persons to experience nuisance effects due to noise associated with the proposed facility would be greater due to longer periods of time spent at home. The number of residents falling into these categories was identified from the interview results and used to assess the significance of sound level increases associated with the landfill and construction operations.[4]

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1. For detailed information on noise impacts, see S.S. Wilson & Associates Site Assessment. Phase 4B: Noise .1987.
2. For detailed information on noise impacts, see S.S. Wilson & Associates Site Assessment. Phase 4B: Noise .1987.
3. Information regarding construction noise was not available on a residence-by-residence basis.
4. A similar assessment was not applied for plant operations as it was assumed that all residents would be home during the night.

The predicted increases in sound levels were compared to the applicable Ministry of the Environment (MOE) guidelines and the ambient sound levels. Increases over the ambient were considered, as noise level increases that do not exceed MOE criteria can still introduce significant changes in the noise environment. Given that the nature of the noise associated with the proposed facility will be out of character with the rural sound environment (S.S. Wilson & Associates 1987), a measure of noise increases above ambient levels provides another useful indicator of noise impact.

Table 9.1 puts into perspective the change in subjective loudness and the magnitude of the noise impact for increases in sound level above the ambient or MOE criteria.

As Table 9.1 indicates, a 10 dBA[1] increase in the noise level sounds twice as loud, a 5 dBA increase is noticeable and a 3 dBA increase is barely discernible (S.S. Wilson and Associates 1987). For the purposes of the noise assessment, the impact associated with any given increase in noise level was rated by S.S. Wilson & Associates (1987) as follows:

0 to 3 dBA - no impact
4 to 5 dBA - low impact
6 to 10 dBA - moderate impact
11 or more dBA - high impact

The determination of impact significance took into account experiences at other waste management facilities, as well as the perceptions and concerns of residents and representatives of community and recreation features in the local community. Consideration was also given to information obtained from literature regarding the effects of noise as a nuisance (Cohen and Weinstein 1982, Finsterbusch 1980).

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[1] Noise level data in this discussion are reported in Leq dBA. dBA and Leq are defined as follows:

dBA: The decibel (dB) is a dimensionless measure of sound pressure level. "A weighting" is the frequency weighting characteristic intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound.

Leq: The 'equivalent energy sound level' is the value of the constant sound level which would result in exposure to the same total A - weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is measured in dBA.

Some typical sound levels are described in Appendix G.

TABLE 9.1
CHANGES IN NOISE ENVIRONMENT ASSOCIATED WITH INCREASES IN SOUND LEVELS

Excess Above Present Sound Level, dBA	Change in Subjective Loudness	Magnitude of the Noise Problem
1 to 5 inclusive	noticeably louder	slight noise problem
6 to 10 inclusive	almost twice as loud	definite noise problem
11 to 15 inclusive	almost three times louder	serious noise problem
16 and over	almost four times louder	very serious noise problem

Source: Ontario Ministry of the Environment, Acoustics Technology in Land Use Planning, Volume 1: Analysis of Noise Impact. (Ontario: 1977), p.62.

Assumptions

The following assumptions (Monenco Ltd. 1988) were applied in the analysis of the noise impacts.

- Construction activities will occur 8 hours a day (8:00 to 16:30, with a half-hour lunch), 5 days a week, with no overtime.
- Construction of the facility will be completed within 18 months.
- Landfill equipment will operate on a relatively continuous basis over an 8 hour day shift, 5 days a week. Occasionally, extended hours of landfill operations will be required; however landfill operations will not occur after 19:00 hours. Equipment will meet MOE specifications for noise.
- The shallow entombed landfill method is utilized.
- Equipment associated with the operation of the incineration plant, and general equipment such as ventilation fans, will operate 24 hours a day, 7 days a week. The physical/chemical treatment plant will initially operate 8 hours a day, 5 days a week.
- Mobile equipment (e.g., trucks) will operate only during the dayshift, 5 days a week.
- The life of the facility will be at least 20 years.
- A 3.0 to 5.0 metre undulating berm located at the 50 metre buffer zone has been included in the calculation of the noise levels.
- No clay stock-piling will occur on-site.

A number of assumptions were applied by S.S. Wilson and Associates in their determination of noise impact zones; these assumptions apply to the social analysis also.

Noise Impact Zones and Criteria

As noted above, several noise contours were developed and mapped by the noise consultant. The noise contours, or noise impact zones, were developed with consideration of the activities and equipment that would generate noise and the criteria established by the Ministry of the Environment. The following provides a discussion of the MOE criteria for each of the three main sources of noise.

Construction Noise Criteria. Ministry of the Environment noise level standards limit the allowable noise levels from construction equipment at the source (i.e., on-site) rather than at the receptor (at residences and community and recreation features) (S.S. Wilson & Associates 1987). If the equipment used during construction is not certified by the manufacturer, or is not new, an acoustical consultant will certify the equipment on-site under operating conditions. MOE may also require verification at various times over the course of construction.

For the purposes of evaluating the potential noise impact associated with the construction activities, noise contours were developed by S.S. Wilson and Associates. The noise contours related to Leq of 55 dBA and 60 dBA. The 55 dBA contour was based on the MOE guidelines (07:00 to 23:00 hours) for new residential development and landfill operations and has been applied in the absence of sound level criteria established specifically for construction activities.

Plant Noise Criteria. The MOE guidelines for new industrial development recommend that the noise from industry not exceed either the existing ambient sound levels or 40 dBA, whichever is higher.

Landfill Noise Criteria. The landfill noise impacts have been assessed against both existing ambient noise levels and MOE reference criteria. The MOE criterion is the greater of either 55 dBA or the existing ambient noise levels between 07:00 and 19:00 hours.

Analysis

Construction Noise Impacts. The assessment of construction period noise impact covers the building of the plant, initial landfill development operations (prior to entombment), and the site perimeter works (e.g., berm construction). The initial development of the landfill will result in noise impacts approximately 1 dBA higher than those levels discussed below for landfilling itself.

The 60 and 55 dBA noise level contours for construction period noise in the 'worst case' month have been mapped and the number of households and residents within them determined. It must be noted that although a number of residences lie within these contours, some of them will not be experiencing any actual noise impact as their ambient levels will be greater than the noise associated with construction, or the increase in noise level will be less than 4 dBA and therefore be imperceptible.[1,2] Table 9.2 indicates the number of households, residents, and residents spending most of their time on their property for residences located within the two construction noise impact zones.

Even if the MOE at-source criteria are met, construction noise levels at some residences will be greater than the ambient noise level conditions. For instance, plant construction noise during the daytime ('worst case' month) will result in the residences adjacent to the site along the north side of Hwy 20 receiving a noise level of approximately Leq 63 dBA; the ambient levels are Leq 59 dBA. A residence approximately 500 m south of the site with an ambient of 40 dBA could receive a noise level of 56 dBA (Leq).

The 'worst case' impact from perimeter works (i.e., construction of the berm, drainage ditch and access road) will occur whenever these operations are opposite a residence.[3] As an example, a residence at the north side of the site could receive levels as great as 80 to 82 dBA when 4 or 5 units of heavy equipment are working at the adjacent perimeter (compared to an ambient level of 59 dBA (Leq)). Similarly, the residence near the southwest corner of the site could receive sound levels as high as 80 dBA. However, the average hourly Leq over the construction period will be approximately 62 dBA (S.S. Wilson and Associates 1987).

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1. Predicted construction noise levels were not provided for each residence, hence it is not possible to determine the actual increase above the ambient noise level for each dwelling.
2. As discussed above, the noise consultant, S.S. Wilson & Associates, has determined that increases in the noise level of less than 4 dBA will not be perceptible; thus IER is judging them to be of no significance.
3. Perimeter works are expected to be 9 months in duration, and will move from the north end of the site to the south. Work will be performed 5 days a week, from 8:00 to 4:30, with a half-hour lunch break at noon. For more details see Monenco Ltd. Site Assessment, Phase 4B: Facility Characteristics, 1988. Prepared for the Ontario Waste Management Corporation.

TABLE 9.2
HOUSEHOLDS AND RESIDENTS LOCATED WITHIN CONSTRUCTION NOISE CONTOURS[1]

Construction Noise Level Contour	Number of Households	Number of Residents[2]	Number of Households With Residents Who Spend Most of Their Time on the Property[3]	Number of Residents Spending Most of Their Time on the Property[3]
60dBA	4	16	2 (2)	4 (5)
55dBA	26	97	17 (20)	34 (41)

Sources: IER, Phase 4B, Resident Interviews, 1986; IER, Phase 4A Resident Survey; S.S. Wilson and Associates, Site Assessment.Phase 4B: Noise, 1987.

Notes:

1. The noise level contours are not mutually exclusive (e.g., the 60 dBA zone is contained within the 55 dBA zone).
2. Includes residents participating in resident interviews and an estimate of the number of residents in all other dwellings using average household size (3.6 persons) for Gainsborough Township,1981 Census.
3. Residents spending most of their time on the property include pre-schoolers (0-4 years), retired persons, farmers, homemakers, and others who work at home. The characteristics of residents within the construction noise contours that were not surveyed are assumed to be the same as those surveyed, and thus survey results were extrapolated by a factor of 1.2 to develop an estimate of the total number of residents who would spend most of their time on the property. The number of sensitive surveyed residents, representing a minimal estimate, is shown first; the extrapolated value follows in parentheses.

Plant Noise Impacts. Generally, plant noise impacts can be expected to be greater at night when ambient noise levels will be lower. During the day, noise from the landfill operation will override the noise associated with the plant.

Residences to the north of the site on Hwy 20 will receive day and night levels of 41 to 42 dBA. However, because these residences will be experiencing an ambient noise level of 56 to 58 dBA during the day and 48 dBA at night (the difference being attributed to reduced Hwy 20 traffic), no overall impact from plant operations will occur.

Only one residence (at location 49 to the south of the site) will experience noise impacts at night, affecting an estimated 4 people (see Figure 9.1).[1] The change in sound levels will represent a low degree of impact for the residents of this household; that is, the sound levels will increase by 4-5 dBA.

Landfill Noise Impacts. The landfill operation is a moving function; landfilling will occur around the site, but at any given time will operate in one location only. For the purposes of the analysis the landfill has been divided into four distinct working areas or quadrants. Landfilling will occur only in one quadrant at any one time; noise impacts will occur only for the period when the working area is at the particular corner of the site, and the impact will diminish as the working area moves further inward on the site. For this analysis it is assumed that the length of noise impact associated with landfilling operations in each quadrant will be at least five years (i.e., minimum 20-year lifetime divided by 4).[2] The values were calculated for 'worst-case' conditions.

The ambient and predicted noise levels for each residence were determined by the noise consultant; the predicted sound levels were compared to the ambient sound levels and MOE criteria, and increases were rated as being high (11 dBA or more increase), moderate (6-10 dBA increase) or low (4-5 dBA increase) in impact.

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[1] As this household chose not to participate in the survey, the average household size for Gainsborough Township in the 1981 Census (3.6) was substituted and rounded to the nearest whole number.

[2] A twenty-year operating lifetime is assumed for the purposes of this analysis; however, it will in fact be somewhat longer.

Residences in several locations will experience sound level increases above the MOE criteria and/or ambient sound levels due to landfill operations in more than one quadrant. Alternatively, some of the residences within the noise zones will experience no impact; their ambient noise levels will exceed the noise attributable to landfilling or the increase in noise level will be less than 4 dBA (and thus will not be considered significant).

In the following analysis, only the households actually experiencing landfill noise impacts (relative to either ambient or criteria levels) are discussed.

Table 9.3 shows the magnitude of landfill noise impacts for various residences for the outdoor living area[1] in terms of ambient noise levels and MOE reference criteria. Table 9.4 shows the same at the exposed building face. Table 9.5 breaks down landfill noise impacts for the outdoor living area by magnitude of impact and number of quadrants causing impact, and provides the number of households, residents and residents spending most of their time on affected properties. Table 9.6 does the same at the exposed building face. The magnitude of impact was assigned according to the highest occurring impact experienced by each dwelling, and therefore represents the 'worst-case'. However, the highest magnitude of impact may not necessarily occur over all impact periods.[2] The number of quadrants causing impact provides a measure of the period of time over which impacts will occur, each quadrant having a lifetime of at least 5 years. Thus, a household impacted by only one quadrant would be affected for at least 5 years; by two quadrants, at least 10 years; three quadrants, at least 15 years; and four quadrants, at least 20 years. The residences with their assigned location numbers are noted on Figure 9.1.

Because the ambient noise levels for residents in the site vicinity are often below 55 dBA, more households experience impact from noise increases over ambient levels than from increases above the MOE criteria. At the outdoor living areas a total of 30 households, accounting for 116 people, will be impacted by landfill noise levels above

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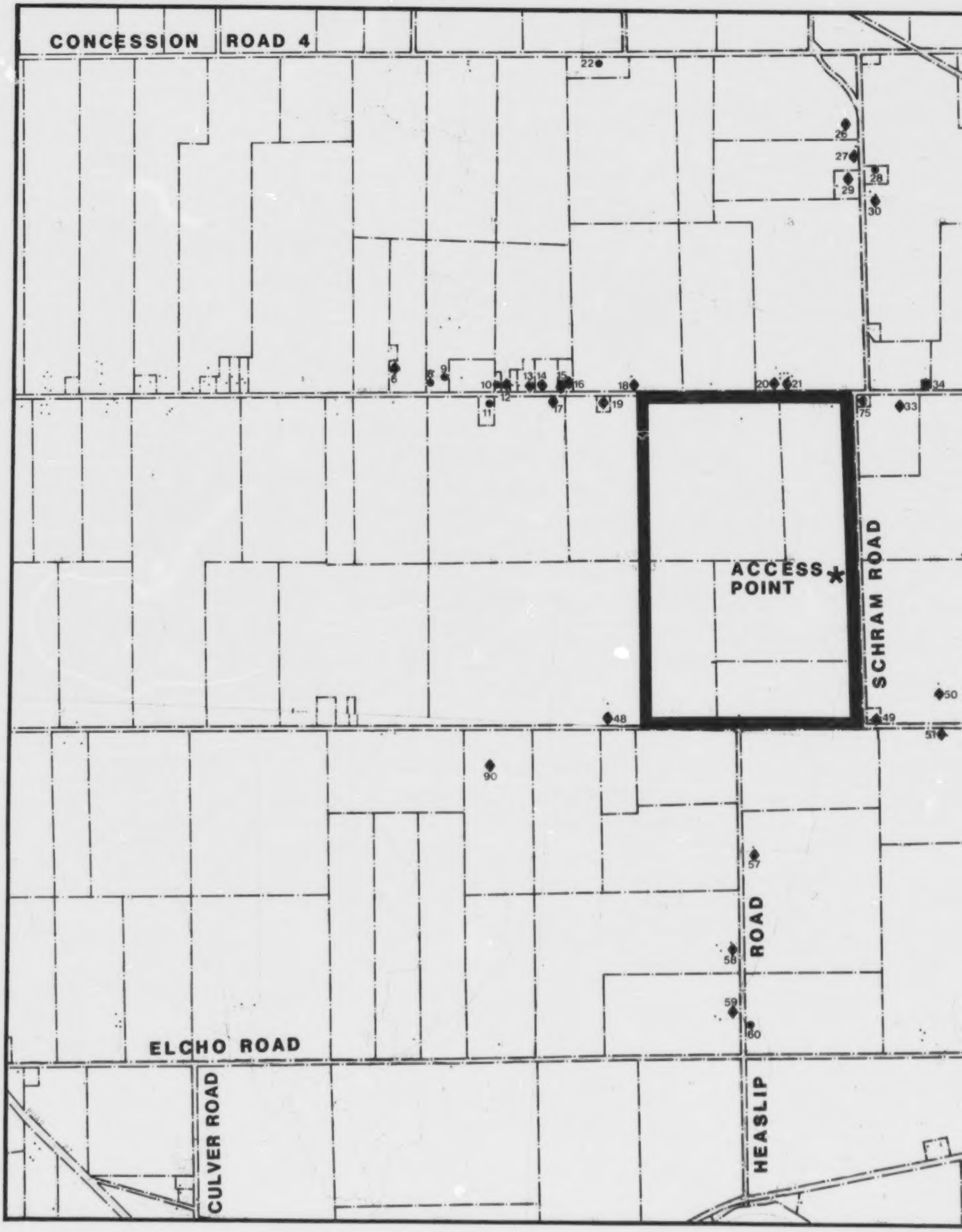
[1] Outdoor living area is defined as a backyard location, sheltered from noise, for family use in good weather (barbeques, outdoor parties etc.) The minimum outdoor living area should be approximately 60m^2 and readily accessible from the house (S.S. Wilson and Associates 1987).

[2] A household may be assessed as having a high noise impact during one 5 year period and a moderate noise impact during a second 5 year period; the magnitude of impact assigned is high.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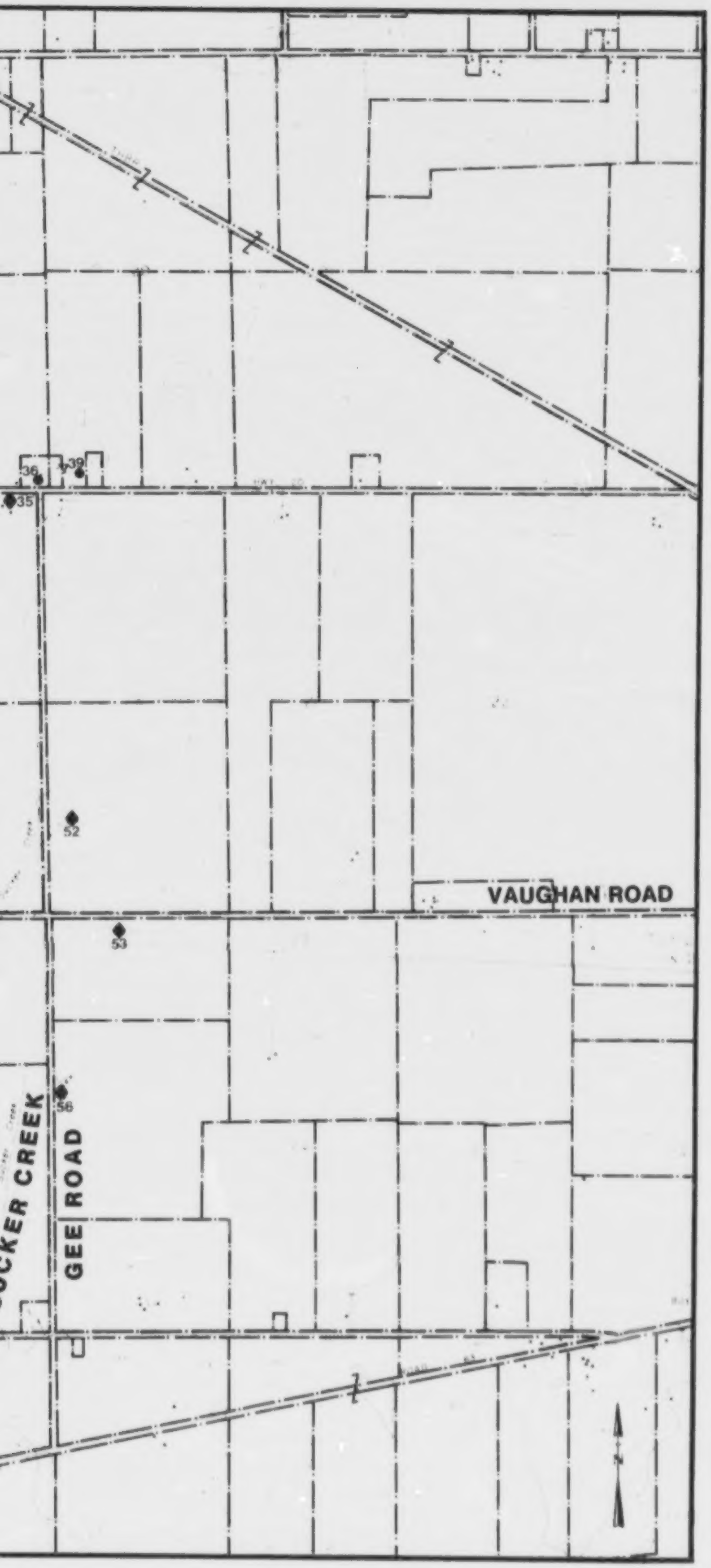

OWMC Ontario Waste Management Corporation

Consultant:

ier

Legend:

Dwellings Impacted by Landfill Noise (Outdoor Living Area) 150,000 t/a* & 300,000 t/a*

◆ 6 **Residences Impacted Both by 150,000 t/a* & 300,000 t/a* Operation**

● 8 **Residences Impacted by 300,000 t/a* Operation Only**

▬ **Preferred Site**

(tonnes per annum)*

Scale 1:20,000

Metres
250 0 500 1000

DWELLINGS IMPACTED BY LANDFILL NOISE

March 1988

Figure 9.1

TABLE 9.3

LANDFILL NOISE IMPACT AT OUTDOOR LIVING AREA BY RESIDENCE LOCATION (150,000 TONNES/ANNUM)[1]

Residence Location Number	Existing Ambient Level (dBA)	Excess Over Ambient[2,3] NW	NE	SE	SW	MOE Reference Criteria (dBA)[4]	Excess Over Criteria[2,3] NW	NE	SE	SW
6	40	L	-	-	-	55	-	-	-	-
12	46	L	-	-	-	55	-	-	-	-
13	48	L	-	-	-	55	-	-	-	-
14	48	L	-	-	-	55	-	-	-	-
15	48	M	-	-	-	55	-	-	-	-
16	48	M	-	-	-	55	-	-	-	-
17	46	M	-	-	-	55	-	-	-	-
18	46	H	-	-	-	55	L	-	-	-
19	45	H	L	-	-	55	L	-	-	-
20	48	M	M	-	-	55	-	-	-	-
21	48	M	H	-	-	55	-	L	-	-
26	40	-	L	-	-	55	-	-	-	-
27	40	L	M	-	-	55	-	-	-	-
29	40	L	M	-	-	55	-	-	-	-
30	40	-	L	-	-	55	-	-	-	-
33	45	M	H	-	-	55	-	L	-	-
34	48	-	M	-	-	55	-	-	-	-
35	46	-	L	-	-	55	-	-	-	-
48	40	-	-	M	H	55	-	-	-	L
49	40	L	L	H	H	55	-	-	M	-
50	40	-	M	H	M	55	-	-	-	-
51	40	-	-	H	M	55	-	-	-	-
52	40	-	L	M	L	55	-	-	-	-
53	40	-	-	M	-	55	-	-	-	-
56	40	-	-	M	-	55	-	-	-	-
57	40	-	-	H	H	55	-	-	-	-
58	40	-	-	L	L	55	-	-	-	-
59	40	-	-	-	L	55	-	-	-	-
75	48	M	H	-	-	55	-	L	-	-
90	40	-	-	-	L	55	-	-	-	-

Source: S.S. Wilson and Associates. Site Assessment, Phase 4B: Noise, 1987

Notes:

1. Noise impact from landfill operations without any stockpiling of excavated clay for 150,000 tonnes/annum, typical operation.
2. The landfill noise impacts were assessed as follows:
   L (low) = 4-5 dBA increase
   M (moderate) = 6-10 dBA increase
   H (high) = 11 or more dBA increase
   Source: S.S. Wilson & Associates, Site Assessment, Phase 4B: Noise. 1987.
3. NW, NE, SE, and SW represent the four landfill quadrants: northwest (NW), northeast (NE), southeast (SE), and southwest (SW).
4. MOE's reference criteria are 55dBA or the existing ambient level, whichever is highest.

TABLE 9.4

LANDFILL NOISE IMPACT AT EXPOSED BUILDING FACE BY RESIDENCE LOCATION (150,000 TONNES/ANNUM)[1]

Residence Location Number	Existing Ambient Level (dBA)	Excess Over Ambient[2,3]				MOE Reference Criteria (dBA)[4]	Excess Over Criteria[2,3]			
		NW	NE	SE	SW		NW	NE	SE	SW
18	56	M	-	-	-	56	M	-	-	-
19	55	M	-	-	-	55	M	-	-	-
20	58	M	M	-	-	58	M	M	-	-
21	58	M	H	-	-	58	M	H	-	-
33	55	-	L	-	-	55	-	L	-	-
48	43	-	-	M	H	55	-	-	-	M
49	49	-	-	H	M	55	-	-	M	-
50	40	L	M	H	M	55	-	-	-	-
51	47	-	-	M	-	55	-	-	-	-
52	40	-	M	M	L	55	-	-	-	-
53	44	-	-	L	-	55	-	-	-	-
57	41	-	-	H	H	55	-	-	-	-
90	43	-	-	-	M	55	-	-	-	-

Source: S.S. Wilson and Associates. Site Assessment, Phase 4B: Noise, 1987

Notes:

1. Noise impact from landfill operations without any stockpiling of excavated clay for 150,000 tonnes/annum, typical operation.
2. The landfill noise impacts were assessed as follows:
   L (low) = 4-5 dBA increase
   M (moderate) = 6-10 dBA increase
   H (high) = 11 or more dBA increase
   Source: S.S. Wilson & Associates, Site Assessment, Phase 4B: Noise. 1987.
3. NW, NE, SE, and SW represent the four landfill quadrants: northwest (NW), northeast (NE), southeast (SE), and southwest (SW).
4. MOE's reference criteria are 55dBA or the existing ambient level, whichever is highest.

TABLE 9.5: LANDFILL NOISE IMPACTS AT OUTDOOR LIVING AREA
BY DEGREE OF IMPACT AND NUMBER OF QUADRANTS CAUSING IMPACT (150,000 TONNES/ANNUM)

Degree of Impact[1] by Number of Quadrants Causing Impact[2]	NOISE LEVELS ABOVE AMBIENT				NOISE LEVELS ABOVE CRITERIA			
	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]
LOW								
One Quadrant	9	38	5	12	6	20	2	4
Two Quadrants	1	2	1	1	-	-	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Low Impact	10	40	6	13	6	20	2	4
MODERATE								
One Quadrant	6	20	4	8	1	4	-	-
Two Quadrants	3	13	2	4	-	-	-	-
Three Quadrants	1	5	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Moderate Impact	10	38	6	12	1	4	-	-
HIGH								
One Quadrant	1	4	1	3	-	-	-	-
Two Quadrants	7	24	3	5	-	-	-	-
Three Quadrants	1	6	1	3	-	-	-	-
Four Quadrants	1	4	-	-	-	-	-	-
Total High Impact	10	38	5	11	-	-	-	-
Total, All Degrees of Impact	30	116	17 (24)[5]	36 (50)[5]	7	24	2 (4)[6]	4 (7)[6]

Sources: S.S. Wilson and Associates, Site Assessment, Phase 4B Noise, 1987; IER, Phase 4B, Resident Interviews, 1986; IER, Phase 4A Resident Survey, 1984

Notes:

1. Degree of impact was assigned according to the highest occurring impact for any location. No impact = noise level increase of 1 to 3 dBA; low impact = 4-5 dBA; moderate impact = 6-10 dBA; high impact = 11 or more dBA increase.
2. Each quadrant has an approximate lifetime of at least 5 years, thus the number of quadrants causing an effect indicates the number of years over which impact will occur. It must be remembered that the highest degree of impact may not necessarily occur over all impact periods.
3. Includes residents participating in resident interviews and an estimate of the number of residents in all other dwellings using an average household size of 3.6 (Gainsborough Township, 1981 Census).
4. Only for residents participating in the resident interview/surveys; includes pre schoolers (0-4 years of age), retirees, farmers, homemakers and all others who work at home and could be expected to be on their property during the daytime. Thus, the number of sensitive residents reported in this table may be somewhat conservative.
5. Assuming that the characteristics of residents not interviewed/surveyed are the same as those reported here, the number of sensitive households/residents impacted by noise levels above ambient levels could increase by a factor of 1.4. These extrapolated values are shown in parentheses.
6. Assuming the characteristics of residents not interviewed/surveyed are the same as those reported here, the number of sensitive househoulds/residents impacted by noise levels above criteria could increase by a factor of 1.8. These extrapolated values are shown in parentheses.

TABLE 9.6: LANDFILL NOISE IMPACTS AT EXPOSED BUILDING FACE BY DEGREE OF IMPACT AND NUMBER OF QUADRANTS CAUSING IMPACT (150,000 TONNES/ANNUM)

Degree of Impact[1] by Number of Quadrants Causing Impact[2]	NOISE LEVELS ABOVE AMBIENT				NOISE LEVELS ABOVE CRITERIA			
	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]
LOW								
One Quadrant	2	9	1	1	1	5	1	1
Two Quadrants	-	-	-	-	-	-	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Low Impact	2	9	1	1	1	5	1	1
MODERATE								
One Quadrant	4	14	3	8	4	13	1	3
Two Quadrants	1	5	1	3	1	5	1	3
Three Quadrants	1	5	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Moderate Impact	6	24	4	11	5	18	2	6
HIGH								
One Quadrant	-	-	-	-	-	-	-	-
Two Quadrants	4	16	1	2	1	4	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	1	6	1	3	-	-	-	-
Total High Impact	5	22	2	5	1	4	-	-
Total, All Degrees of Impact	13	55	7 (10)[5]	17 (24)[5]	7	27	3 (5)[6]	7 (13)[6]

Sources: S.S. Wilson and Associates, Site Assessment, Phase 4B: Noise, 1987; IER, Phase 4B, Resident Interviews, 1986; IER, Phase 4A Resident Survey, 1984

Notes:

1. Degree of impact was assigned according to the highest occurring impact for any location. No impact = noise level increase of 1 to 3 dBA; low impact = 4-5 dBA; moderate impact = 6-10 dBA; high impact = 11 or more dBA increase.
2. Each quadrant has an approximate lifetime of at least 5 years; thus the number of quadrants causing an effect indicates the number of years over which impact will occur. It must be remembered that the highest degree of impact may not necessarily occur over all impact periods.
3. Includes residents participating in resident interviews and an estimate of the number of residents in all other dwellings using an average household size of 3.6 (Gainsborough Township, 1981 Census).
4. Only for residents participating in the resident interview/surveys; includes pre-schoolers (0-4 years of age), retirees, farmers, housewives and all others who work at home and could be expected to be on their property during the daytime. Thus, the number of sensitive residents reported in this table may be somewhat conservative.
5. Assuming that the characteristics of residents not interviewed/surveyed are the same as those reported here, the number of sensitive households/residents impacted by noise levels above the ambient could increase by a factor of 1.4. These extrapolated values are shown in parentheses.
6. Assuming that the characteristics of residents not interviewed/surveyed are the same as those reported here, the number of sensitive households/residents impacted by noise levels above criteria could increase by a factor of 1.8. These extrapolated values are shown in parentheses.

existing ambient levels. Of these, a total of 50 residents in 24 households are estimated to be potentially 'sensitive' because they spend most of their time at home or on their property.[1] Nine households (38 residents) will experience a low degree of noise impact for at least five years; at least 12 of these residents (5 households) are known to be sensitive. One household (2 people) will be impacted to a low degree for at least 10 years, with 1 of the residents known to be spending most of their time on their property (Table 9.5).

Six households (20 people) will experience a moderate degree of landfill noise impact for at least 5 years; a minimum of 8 residents from 4 of these households are known to be sensitive. Landfill noise levels causing at least moderate impacts will affect 3 households (13 people) for at least 10 years. Of these, at least 4 residents (from 2 households) can be said to spend most of their time on their property. Only 1 household (5 people) will experience moderate noise impacts for at least 15 years; none of these residents are considered as being sensitive.

Only one household (4 residents) will experience a high degree of impact for at least 5 years, with a minimum of 3 of these residents spending most of their time on their property. Seven households (24 residents) will receive at least some high degree of impact for at least 10 years; at least 5 of these people (from 3 households) are known to be sensitive. Landfill noise causing at least some high degree of impact for at least 15 years will affect another household (6 residents); 3 of the residents from this household are known to spend most of their time on the property. Finally, 1 household (4 people) will experience a high degree of impact for at least some part of the minimum 20-year period they are impacted by landfill noise. None of these residents are known to be sensitive.

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[1] These values for the total number of sensitive households/residents include those reported by surveyed households and an estimate of the number of sensitive residents in non-surveyed households, based on the assumption that non-surveyed households have the same characteristics as those that were surveyed. The number of sensitive residents/households in subsequent parts of this section pertains only to those in interviewed households, and is therefore a minimum estimate. If it is assumed that residents not interviewed have characteristics similar to those interviewed, the values reported below would increase by a factor of 1.4 for noise levels above the ambient.

A total of 7 households (24 people) are impacted by landfill noise levels at the outdoor living area exceeding the MOE reference criteria; of these, at least 4 households (7 residents) can be considered as sensitive.[1] Six households (20 people) will experience a low degree of noise impact for at least 5 years; at least 4 of these residents (from 2 households) can be expected to spend most of their time at home. One household (4 residents) will be impacted to a moderate degree for at least 5 years; none of these residents were considered as sensitive. No household would receive a high degree of impact above the criteria for any period of time.

The predicted landfill sound levels at the exposed building face of nearby residences indicate that a total of 13 households, accounting for 55 people, will be impacted by landfill noise levels above the existing ambient levels (Tables 9.4 and 9.6). Twenty-four (24) residents in 10 of these households can be expected to spend much of their time at home or on their property.[2] A total of 7 households (27 people) are impacted by landfill noise levels exceeding the MOE reference criteria; of these, a minimum of 13 residents from 5 households can be considered as sensitive.[3] Table 9.6 provides the degree of impact, number of quadrants causing impact and an estimate of the number of households, residents and residents spending most of their time on impacted properties.

Community and Recreation Features

In Phase 4A, no community and recreation features were identified within any of the noise impact zones. This has not changed in Phase 4B. A proposed campground/trailer park to the east of the site (see Figure 6.3) lies within the 50 dBA landfill noise contour/impact zone; however it experiences no impacts in terms of either existing ambient sound levels or the MOE reference criterion.

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1. These values for the total number of sensitive households/residents include those reported by surveyed households and an estimate of sensitive residents in non-surveyed households, based on the assumption that non-surveyed households have the same characteristics as those that were surveyed. The number of sensitive residents/households described in subsequent discussion pertains only to those in interviewed households, and it is therefore a minimal estimate. If it is assumed that residents not interviewed have characteristics similar to those interviewed, the values reported below would increase by a factor of 1.8 for noise levels above MOE criteria.
2. The values for the total number of sensitive households/residents include those reported by surveyed households and an estimate of sensitive residents in non-surveyed households based on the assumption that non-surveyed households have the same characteristics as those that were surveyed. Assuming their characteristics are similar, the values reported for sensitive residents could increase by a factor of 1.4.
3. As above; however the factor would be 1.8.

Experiences at Other Facilities

Noise has been a problem at the Tricil facility near Sarnia. Nearby residents reported that noises coming from landfill equipment, blower fans on the incinerator, speakers at the plant, beepers on trucks and truck traffic, can be heard up to 1.5 km away. Blower noise heard at approximately 1 km from the site centre was noted to resemble the muted roar of a jet engine. At greater distances the site-related noises are less intrusive; audible but not bothersome. During a tour of the area and interviews with nearby residents, the intrusiveness of the site noise was confirmed by OWMC consultants.[1] The blower fans of the incinerater were audible 1.5 km from the site. Noise was not specifically mentioned as being a problem at the remaining hazardous waste management facilities that were visited. The Rollins facility in Deer Park, Texas, is located within a large industrial area so it is unlikely that nearby residents would attribute any noise problem specifically to this facility. The Stablex plant in Blainville, Quebec was noted as not being noisy (the nearest residents are approximately 200 m away).

Public Perceptions and Concerns

Phase 4B resident interview results show that 57 (24% of respondents) of the households interviewed believed that they would experience noise impacts from the OWMC facility.[2] Twelve (12) of these households will actually experience perceptible noise increases above existing ambient noise levels; of these, 5 will experience impacts above MOE criteria. Respondents believing they would experience noise impacts indicated they would change their household activities in the following ways: close windows (18%); experience a change in lifestyle (14%); possibly move (10%); and reduce outdoor activities (6%).

Other findings regarding noise impacts are evident from the interviews: five percent of respondents indicated noise as a general concern.[3] Noise was specifically mentioned as potentially affecting hunting activities on respondent's properties,[4] and may be a

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1. Ecologistics Ltd., Visit to Tricil Area Farm Community (unpublished field notes), May 21, 1987 and IER tour of area, February 22 and 23, 1987 (unpublished field notes).
2. Question 85a.
3. Question 51.
4. Question 52c.

contributing factor in reducing the quality of activities such as cross-country skiing, gardening, family barbecues, entertaining friends and relatives, children's activities, leisure and relaxation in general.

Concerns were expressed about increased noise levels from the OWMC facility at kitchen table meetings, an OWMC Regional Meeting, and by key community contacts. Residents fear that the plant will affect the peaceful, quiet, rural nature of the area. Survey results indicate that 'peace and quiet' is an important characteristic of the study area for 104 (45%) respondents.[1] Ninety-one percent of respondents (219) stated that 'peace and quiet' was one of the characteristics they liked most in the area.[2] Only 16 (7%) of those residents surveyed felt that noise was presently a problem in the community.[3]

A number of variables can contribute to an individual's response to noise (Finsterbusch 1980, 195-220; Cohen and Weinstein 1982, 45-74):

- fear associated with the activities of noise sources; for instance, the fear of crashes in the case of aircraft noise;
- the extent to which residents of a community believe that they are being treated fairly;
- attitude of the community residents regarding the contribution of the activities associated with the noise source to the general well-being of the community;
- the extent to which residents of the community believe the noise source could be controlled.

These variables can contribute to public perception of noise and the degree to which it is annoying to an individual. Those who believe that the facility is not contributing to the general well-being of the community and are concerned about the risks associated with the activities on-site could find the noise annoying, regardless of the increase.

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[1] Residents were asked an open-ended question: 'What were the three most important characteristics you liked about this area?' (prior to the announcement of OWMC's preferred site in West Lincoln) (Question 58).

[2] Residents were asked: '(Here) are some possible characteristics that may make a community a satisfying place to live. Which of these characteristics, if any, do you like most about this area?' (Question 59).

[3] Residents were asked: '(Here) are some additional characteristics that could sometimes be a problem in a community. Do you find any of these to be a problem in this area?' (Question 60).

Similarly, the degree to which residents believe the site noise can be controlled and that they are being treated fairly (with respect to any aspect of the facility and operations) will influence their response to the noise.

Research into community noise provides little evidence that people adapt to noise in residential settings: "....it is worth emphasizing that people appear to have much more difficulty in adjusting to noise than is commonly believed" (Cohen and Weinstein 1982, 58). Further, while noise is disruptive in itself, it also serves as a continual reminder of a situation that an individual may find distressing.

Evaluation Without Mitigation

Construction Noise. MOE noise level criteria limit the allowable noise levels from construction equipment at source, rather than at the receptor. Even if criteria are met, construction noise levels at some residences will be greater than the ambient noise levels. These impacts would vary (with residence location) from low to high. A very high degree of impact could occur when construction of perimeter works are opposite a residence.[1] Although the number of households, residents, and an estimate of the number of residents spending most of their time on their property within various noise impact zones have been determined, it is not clear how many of them will actually experience construction noise impacts. Some of them will not experience any impact because their ambient levels will be greater than the noise associated with construction or the increase in noise level will be less than 4 dBA (and therefore will not be considered significant).

A number of people in these residences may be more sensitive to the noise levels by virtue of spending more time on their property. An estimated 41 residents may be considered as sensitive.

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[1] Perimeter works are expected to be nine months in duration, and will move from the north end of the site to the south. Work will be performed five days a week, from 8:00-4:30, with a half-hour lunch break at noon. For more details, see Monenco Ltd. Site Assessment, Phase 4B: Facility Characteristics. 1988.

The noise impacts will be experienced for 8 hours a day, 5 days a week for 18 months.[1] The construction noise analysis was done on a 'worst case' basis and applies only to a 4 or 5 month period. At other times noise levels will be considerably lower and in some months there may be no noise impact at a given location. Relative to site operations noise, the sound level impact is short-term for most residents. However, 21 of these residences will also experience landfill noise impacts.

Plant Noise. Only one residence, to the south of the site (at location 49, Figure 9.1), will experience a low level of impact as a result of plant operations; these impacts will occur at night during the life of the facility. In addition to plant noise, this residence will be affected by construction and landfill noise also.

While generally the plant noise impacts will be confined to night-time, there will be occasions during the day-time when noises from the plant will be audible over the site activities. Sounds from speakers at the plant, beepers on trucks and blower fans on the incinerator, while intermittent, are intrusive in nature and could be annoying to nearby residents.

Landfill Noise. Overall, the landfill operations will be the most significant contributor to the change in the sound environment. Tables 9.3 and 9.4 show the degree of landfill noise impacts for specific residences in terms of ambient noise levels and MOE reference criteria at the outdoor living areas and exposed building face, respectively. Tables 9.5 and 9.6 break down these impacts by degree of impact and number of quadrants causing impact, and provide an estimate of the number of households, residents, and residents spending most of their time on impacted properties.

As seen from Tables 9.3 and 9.5, thirty (30) residences (116 residents) will receive sound levels above the ambient; 10 households will experience high noise impacts at the outdoor living area; 10 households, moderate impacts; and 10 households, low impact. These impacts will be experienced for periods ranging from at least 5 to 20 years. Seven (7) households (24 residents) will be affected by noise exceeding MOE criteria as well as increases above ambient levels. One (1) of these households will experience a moderate impact and 6 households, a low impact. No households will experience a high impact. Exceedances over the ambient sound levels will range from at least 5 to 20 years; the MOE criteria will be exceeded for the shortest time period, at least 5 years.

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[1] Based on documentation of facility construction activities in Monenco Ltd. Site Assessment, Phase 4B: Facility Characteristics. 1988. Prepared for the Ontario Waste Management Corporation.

Thirteen (13) residences (55 residents) will receive sound levels above the ambient at the exposed building face: 5 households will experience high noise impacts; 6 households, moderate impacts; and two households, low impact. These impacts will be experienced for periods ranging from at least 5 to 20 years. Seven (7) households (27 residents) will be affected by noise exceeding MOE criteria as well as increases above ambient levels. One of these households will experience a high impact; 5 households, a moderate impact; and 1 household, a low impact. Exceedences over the MOE criteria will range from 5 to 10 years; the ambient sound levels will be exceeded for durations of at least 5 to 20 years.

Generally, those affected by noise impacts above the MOE criteria and for longer periods can be considered as experiencing more significant impacts. However, even if the impact occurs only relative to the ambient sound levels, the type of noise represents a significant change in the sound environment.

The impacts noted above will be encountered on a daily basis with the exception of weekends. Occasionally the landfill operations, and hence noise impacts, will extend beyond the 8 hour shift but this is likely to occur only infrequently.

With respect to the three main sources of noise, the greatest effects on resident's use and enjoyment of property will be felt during the summer, when more time is spent outdoors, and windows are open. It should be noted that the type of noise generated by site operations will be out of character with the noise usually encountered in rural areas. For example, the plant noise will be noticeable as a constant low level background 'hum' which may be intrusive in a rural environment (S.S. Wilson and

Associates 1987, 39). Judging from the importance residents place on the peace and quiet in their community, the rural-agricultural nature of the area, and the absence of industry, in addition to the negative image held by most of the proposed facility, it is probable that the noise generated by construction and site operations will be seen as a significant impact.

Impact Management Strategy

Construction Noise. Construction equipment options are currently being examined with respect to minimizing construction noise impacts. Noise control devices and mufflers on equipment will reduce noise impacts; the perimeter berm, once constructed, will also serve to reduce noise impacts (Ontario Waste Management Corporation 1988). Regular testing of sound levels generated by construction equipment should be undertaken to ensure that the equipment meets MOE criteria during the construction period (S.S. Wilson & Associates 1987). Steps should be taken to ensure that construction activities do not exceed the 8 hour shift wherever possible, so as to avoid the increased sound levels during the periods of the day when the impacts would be greater.

Twenty-one (21) of the residences experiencing construction impacts will also be affected by landfill noise; these residences are located adjacent or very close to the site.[1] Mitigation measures are identified below for these properties in the landfill discussion. Consideration should be given to the implementation of the mitigation measures for these properties prior to the construction phase rather than waiting until the operation phase.

Plant Noise. In terms of plant operations, noise mitigation will need to be considered for the potentially sensitive location south of the site. Until facility equipment layout and specifications are finalized, it is not practical to detail 'at source' mitigation measures (i.e., design modifications, equipment choice, enclosures, baffling etc.) (S.S. Wilson and Associates 1987). The noise consultant has suggested on-site monitoring of noise levels. As noise impacts will occur at night, it may be more realistic to mitigate the noise impact at the receptor. This may involve installation of central air conditioning and improvement of the attenuation quality of windows and exterior doors. The house would require an individual assessment to determine its suitability for such treatment (S.S. Wilson & Associates 1987).

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[1] These residences are at locations 12-21, 33 - 35, 48-52, 57, 75 and 90 (see Figure 9.1).

Landfill Operations Noise. Because of the nature of the landfill works[1] it is not practical to consider noise mitigation at the source (i.e., the landfill) other than to ensure that the equipment meets the MOE requirements (S.S. Wilson & Associates 1987).

Berms will be constructed to reduce the sound levels between the source and receptor. The noise levels from the landfilling operations were calculated to incorporate the effect of a 5.0 metre berm at the midpoint of the 50 metre buffer area (noise reduction from the berm was 5 dBA). Increasing the height of the berm would increase attenuation by approximately 1 dBA for each 1.0 m increase in height.[2] OWMC has stated that it will construct a 3 to 5 metre undulating berm around the site perimeter (OWMC 1988).

Consideration would need to be given to the visual impact of a higher berm; a higher berm may detract further from the visual character of the area. No matter what the ultimate berm height, it is unlikely that the increased sound levels will be eliminated (S.S Wilson & Associates 1987).

Mitigation measures can also be considered at the receptor (S.S. Wilson & Associates 1987). Because landfill operations occur in the day-time, both indoor and outdoor noise mitigation needs to be considered. Measures suggested by the noise consultant include:

- acoustic fences around outdoor living areas;
- installation of central air conditioning;
- improved window glazing.

The first measure noted would help attenuate the outdoor sound levels; the latter two measures, the indoor sound levels.

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[1] The noise consultant cited the impracticality of erecting and disassembling barriers as the landfill moves around the site, and the potential interference of the barriers with equipment (S.S. Wilson & Associates 1987).

[2] S.S. Wilson & Associates. Site Assessment, Phase 4B: Noise. 1987.

Mitigation cannot be detailed in the absence of an analysis of each individual receptor to determine what treatment may be practical (OWMC 1988). In some residences, for example, the installation of central air conditioning may not be feasible (S.S. Wilson & Associates 1987).

Acoustic fences around outdoor living areas to mitigate outdoor sound levels are generally effective if only restricted to a small area. In a rural area such as this, where residents own large properties, the fences would attenuate sound levels only in a small area and their use and enjoyment of the remaining portion of the property would still be affected.

The noise consultant has suggested that OWMC undertake a monitoring program (S.S. Wilson & Associates 1987). A combination of continuous and periodic on-site monitoring of noise levels will be undertaken to ensure that the equipment is meeting MOE requirements (OWMC 1988). Noise due to truck traffic in and out of the site will be monitored. Regular surveys of sound levels off-site should also be undertaken to confirm the predicted sound levels, identify any changes in the sound environment, and measure the effectiveness of mitigation measures. It is anticipated that off-site monitoring will involve some difficulties (S.S. Wilson & Associates 1987):

- Sound level instruments cannot differentiate between plant noise and other community noises not associated with the OWMC operation. The sound levels are cumulative.
- Weather conditions are likely to affect the noise from the plant and/or other community noises. For example, high wind conditions could increase the sound levels measured by the microphones. Rain could increase the vehicular traffic (ambient) noise without affecting the plant noise over and above the normal levels.

  The only exception to the above would be continuous monitoring along the west property line since there is no nearby road traffic (however, one must be careful of the noise from farming equipment which can be quite noisy at shorter distances).

Semi-annual noise surveys will be carried out at the location of key receivers (Ontario Waste Management Corporation 1988). These sound level measurements should be made by qualified individuals who can follow the Ministry of the Environment procedures for separating the noise from the plant and the ambient (due to vehicular traffic) (S.S. Wilson and Associates 1987). The sound level surveys could take up to one or two days per key location under weather conditions specified by the MOE.

Short-term noise level measurements will be made (on a 24 hour basis) around the site perimeter to establish reference conditions:

- when the plant goes into operation at 50,000 t/a;
- when the plant goes into operation at 150,000 t/a; and
- when the plant goes into operation at 300,000 t/a.

The OWMC complaints bureau will also provide a mechanism through which residents can voice their concerns about noise. Another option to be considered is the purchase of properties which will be significantly impacted by landfill noise. The properties could then be sold at a later time when the landfill operations have moved to another area. This step should be undertaken through an offer to purchase so that residents have the opportunity to decide for themselves whether they wish to sell. OWMC's approach to the purchase of properties severely impacted by nuisance impacts is discussed in greater detail in Section 9.5.6 and elsewhere (OWMC 1987 and 1988).

Evaluation With Impact Management Strategy

At this time it is difficult to provide an assessment of the net noise impacts of the OWMC facility, for the following reasons:

- although possible mitigation measures have been suggested, their effects on the noise levels experienced by residences can only be determined on a case-by-case basis. This information is not yet available. However, the noise consultant has estimated the residual landfill noise impact after mitigation based on the assumption that central air conditioning and upgraded windows will be feasible in all residences (S.S. Wilson & Associates 1987).

- although impacts have been determined on an individual residence basis for plant and landfill noise, this has not been done for construction noise (S.S. Wilson & Associates 1987). It is anticipated that this information will be available following facility approval.

Some residual noise impacts will occur, even after mitigation. There are a number of factors attributing to this:

- it is probable that mitigation measures will not be 100% effective even if installed;

- some residences may not be suited to retro-fit measures such as installation of air conditioning or multi-glaze windows;
- while indoor noise impacts may be mitigated relatively easily, this may not be the case for outdoor noise. For example, the acoustic fences suggested as mitigating measures may not eliminate outdoor noise over an entire property.

It should also be noted that even if noise impacts at residential locations can be mitigated effectively, people may resent the very presence of the fences, closed windows, and air conditioning.

The noise consultant estimated post-mitigation landfill noise impacts at both the exposed building face and outdoor living areas (S.S. Wilson & Associates 1987). Information regarding post-mitigation landfill noise levels is available only for the 300,000 tonnes/annum typical operation case, which can be considered as the 'worst-case' scenario. Mitigation measures would have an even greater positive effect for the 150,000 tonnes/annum base case scenario described above. Assuming that central air conditioning and upgrading of windows is effective in all cases, it was determined that landfill noise impacts over MOE criteria ('closed window conditions') at the exposed building face would be eliminated. Although these measures would not change the outdoor living area noise levels, the indoor noise rating would be "no impact".

The level of attenuation achieved by berms and barriers at outdoor living areas will be approximately 5 dBA if a 3m barrier is constructed. Outdoor living area impact ratings would change as follows: in terms of MOE criteria, the noise level increase at one residence (#49) would change from 11 dBA (high impact) to 6 dBA (moderate impact) for at least five years. All others would be rated as minimal or no impact. With respect to ambient noise levels in the outdoor living area, 25 residences would change from some degree of impact to none at all. Four would experience a low degree of impact for at least 5 years, another three moderate impact for at least 5 years, and two households would experience a high degree of impact for at least five years. Two residences would experience moderate impacts for at least 10 years, and four households would experience a high impact for at least 10 years (S.S. Wilson & Associates 1987).

In summary, it is anticipated that no residences will experience indoor noise impact with respect to MOE criteria. As such, only outdoor activities on properties impacted by noise should experience disruption. In terms of MOE criteria, only one dwelling will experience moderate impacts in the outdoor living area; however, a number of others (15) will experience perceptible increases in noise above the ambient levels for periods of at least five or ten years. During this time, outdoor activities could be disrupted during landfilling operations, moreso during the summer when residents spend more time outdoors (gardening, barbecues, relaxation).

Given the importance of "peace and quiet" to residents in the area, the negative perceptions of the facility, and the industrial nature of the noise, the change in the sound environment will likely be significant to many residents even if the sound levels meet the MOE criteria. The impact management measures described above should be undertaken to improve the acceptability of the facility and the residual noise levels.

9.5.2 VISUAL INTRUSION

Introduction

The development of the proposed hazardous waste management facility within the West Lincoln community will introduce an obvious change to the visual character of the immediate site and surrounding area.

The OWMC facility will consist of five process areas: an incinerator and stack, a landfill area, a physical/chemical treatment plant, a solidification plant with an evaporation stack and a laboratory/administrative area. The most visible point of the facility will be the incinerator stack with a height of 60m; the evaporation stack will be 45m high (EDA Collaborative Inc. 1987).

This industrial complex will be in direct contrast to the open, relatively unobstructed rural setting found in West Lincoln and will be an obvious landmark for the neighbouring residents. The disruption that this visual intrusion will have on the residents' use and enjoyment of their property and community underlines the rationale for this analysis.

Approach

IER integrated a number of information sources in its analysis of the visual impacts. EDA Collaborative Inc. provided background information on visual intrusion impacts on area residents and features, and established the visual impact zones. Information from other waste management facilities located in North America was also used to illustrate actual experiences regarding visual intrusion. As well, comments from the resident interviews were included in the analysis as a means to address the concerns which area residents have regarding the facility and its impact on the visual landscape. Finally, IER completed the analysis with comments based on its professional judgement, given the information provided and past experiences.

Standards for visual intrusions have not been established in the West Lincoln Planning Area, and there are no specific federal or provincial guidelines or standards to refer to. However, comment can be made regarding the development guidelines set out in the Official Plan. The Official Plan states that industrial development is to be directed towards the industrial park in Smithville and the surrounding hamlets. This policy is intended to ensure that the rural character of the area remains intact.

Assumptions

EDA Collaborative, Inc. was responsible for assessing the visual impacts associated with the OWMC facility. Using their report (EDA Collaborative Inc. 1987) as a basis for analysis, IER applied the same assumptions to the social impact analysis undertaken for the visual impacts.

Visual Impact Zones

Four visual impact zones were identified and applied by EDA in the analysis of visual impacts. The zones reflect the degree or magnitude of visual intrusion that would be experienced by the residents as well as community and recreational features within each zone. Two of these impact zones, the high and moderate visual impact zones, were assessed in the social assessment.[1]

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[1] EDA identified two additional zones - low visual impact and little or no impact.

The high impact zone is defined as being adjacent to the site and extends out a minimum of 0.8 km. In this zone, the facility demands attention and will not be overlooked by the average observer. In some areas, this zone extends farther than 0.8 km due to the open character of the landscape. Viewers in these areas would have an open, unscreened view of the facility, but from a greater distance (EDA Collaborative Inc. 1987).

The moderate impact zone is generally the area between 0.8 km to 2.0 km away from the site. At this distance the facility attracts attention and begins to dominate the landscape. In certain areas the zone is closer than 0.8 km to the site. This has occurred where the facility is screened by dense vegetation, allowing only a small portion to be seen (EDA Collaborative Inc. 1987).

Analysis

The incinerator stack will be a 60m high structure that may be visible 'up to and possibly more than 5 km from the site' (EDA Collaborative Inc. 1987, 61). Under normal operating conditions no visible plume, or perhaps a minor plume, are expected. The evaporator stack will be 45m in height, and it is expected that a visible plume 100 to 200m in length will be visible, most often during winter months. The plume would probably be most visible to travellers along Highway 20 and residences within the high and moderate impact zones (EDA Collaborative Inc. 1987). Eighty-nine (89) residents (24 households) are located within the high impact zone, while 131 residents (34 households) reside in the moderate impact zone (see Table 9.7).[1] The residences located within the visual impact zones are identified in Table 9.8 and noted on Figure 9.2 (this figure is located in a pocket at the end of the report).

Within these households are located a number of residents who can be considered as 'sensitive' to visual impact because they spend a considerable amount of time on their property. These residents would include homemakers, farmers, young (pre-school)

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[1] This household data is relevant for both the construction and operational phases.

TABLE 9.7
VISUAL INTRUSION

	Number of Households	Number of Residents[1]	Number of Persons Spending Most Time on Property[2]	
High Impact Zone	24	89	32	(42)
Moderate Impact Zone	34	131	40	(52)
Total	58	220	71	(92)

Sources: IER, Phase 4B, Resident Interviews, 1986; IER, Phase 4A Resident Survey; Statistics Canada, 1981 Census

Notes:

1. Includes interviewed/surveyed residents and an estimate of all other residents (based on an average household size of 3.6 reported for former Gainsborough Township in 1981 census).
2. These values include those reported by surveyed households and an estimate of sensitive residents in all households based on the assumption that non-surveyed households have the same characteristics as those that were surveyed. A factor of 1.3 (based on the survey response rate of those living in the visual impact zones) was used to determine these latter values. Results based on survey results only are shown first, and represent a minimum estimate. These are followed by extrapolated values in parentheses.

TABLE 9.8
PROPERTIES WITH RESIDENCES WITHIN VISUAL IMPACT ZONES

MODERATE VISUAL IMPACT ZONE

RESIDENCE NUMBER	ASSESSMENT NUMBER	RESIDENCE NUMBER	ASSESSMENT NUMBER
1,76	10-113 (2 households)	63	7-244
3	10-173	64	7-240
4	10-112	65	7-240-5
9	10-171[1]	66,67	6-198 (2 households)
11	10-110-1	68	6-197
35	10-100	71	7-143
36	5-125	72	7-144
37	5-124	73	6-255
39,41	5-123 (2 households)	96	10-114
40	5-123-1	97	10-176
42	5-122	98	10-175-5
43	6-301	99	10-175
44	5-121	100	10-174
55	6-269	101	10-178
59	7-20	102	10-177
62	7-245		
HIGH VISUAL IMPACT ZONE			
10	10-170	45	10-086
12	10-169	46	10-084
13	10-166	48	10-082
14	10-165	49	10-077
15	10-164	50	10-076
16	10-163	51	7-264
17	10-110	52	6-114
18	10-162	57	7-015
19	10-108	58	7-21
20,21	10-160(2 households)	60	7-014
30	10-11	75	10-103
38	6-302		

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1. Note: There are two residences on this property, but only one is in the visual impact zone

children, retired and self-employed (home based) workers. Forty (40) people with these characteristics are estimated to be located in the high impact zone and fifty-two (52) in the moderate impact zone (see Table 9.7)[1]. These people will be most affected by the physical presence of the OWMC facility because their visual environment will be changed from its usual state. Phase 4B interview results show that seventy-two (72) of the households interviewed believed that they would be able to see the facility.[2] However, a large number of households who believe they will be affected by the visual impacts will not be affected or will be only to a limited extent since they reside in neither the high or moderate impact zones (see Table 9.9). Of the fifty-eight (58) households who will actually experience visual impacts, a large majority of forty-two (42) are not aware that they will be able to see the facility. Information on which households will experience direct visual impacts must be clearly communicated with the residents during the next public consultation phase.

Community and Recreation Features

Two community and recreation features (one proposed) are located within the moderate visual impact zone: Bethel Community Church and a proposed trailer/campground park (see Figure 9.2).

The Bethel Community Church would receive minimal visual impacts since most activities associated with the church would be held indoors.

The OWMC facility would have moderate visual impact on the proposed trailer park/campground. Campgrounds tend to be located in rural/natural settings away from industrial development and this type of location is attractive to campers. Potential users could choose an alternate location to camp. Because of the moderate visual impact the campground may not experience significant loss in potential users provided the proposed campground does not experience other nuisance impacts. It is uncertain if or when the proposed trailer park/campground is to be developed.

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[1] These values include those reported by surveyed households and an estimate of sensitive residents in all households based on the assumption that non-surveyed households have the same characteristics as those that were surveyed. A factor of 1.3 (based on the survey response rate of those living in the visual impact zones) was used to determine these values.

[2] Question 85f.

TABLE 9.9
PERCEPTIONS OF VISUAL IMPACT AND HOUSEHOLDS IN VISUAL IMPACT ZONES

	High Visual Impact Zone	Moderate Visual Impact Zone
Actual number of households in impact zone	24	34
Number of households who believe they are located in impact zone[1]	72	
Number of households who believe they will be affected by visual intrusion and will be affected	15	13
Number of households who are not aware that they will be affected by visual intrusion	9	21
Number of households who believe they will be affected by visual intrusion but are not in either impact zone	44	

Sources: IER, Phase 4B, Resident Interviews, 1986; EDA Collaborative Inc. Phase 4B, Site Assessment: Visual Impact., 1987.

Notes:

1. Question 85f.

Experiences at Other Facilities

Experiences at existing waste management facilities visited by IER staff generally indicate that visual intrusion is not a significant problem or concern. The Rollins Environmental facility in Deer Park, Texas is located in a major industrial area and as such conforms with the visual character of the area.

The Stablex facility in Blainville, Quebec is separated from the nearby residential areas by a buffer zone and does not have an incinerator and stack. Negative comments concerning visual intrusions were noted at the Tricil site in Ontario and the Al Turi landfill site in New York State. The landfill in New York State is seen as being 'an incompatible visual effect' that is an eyesore for many of the residents (Edelstein, undated). While residents near the Tricil site did not have the strong negative comments of the Al Turi residents, one resident did state that the facility conflicts with the memories they have of a more distinctly rural way of life.[1]

Public Perceptions and Concerns

Public concerns expressed in West Lincoln specifically related to the impacts of visual intrusion were not significant relative to other concerns (specifically health and environmental concerns). This is true for both respondents to the resident interviews and individuals participating in other public consultation activities. The open-ended interview question regarding residents' overall concerns indicated that 2% (4 respondents) are concerned about visual disfiguration as a result of OWMC locating in West Lincoln.[2] Six percent of those interviewed (13 respondents) are concerned about the effect of the facility on the character of the area; this may relate to changes in the visual character of the area. Similarly, while 2% (4 respondents) believe that being able to see the facility will affect their satisfaction with West Lincoln as a place to live, another 22% (40 respondents) felt their satisfaction would be affected through a change in the character of the area.[3]

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[1] Ecologistics Ltd., Visit to Tricil Area Farm Community (unpublished field notes), May 21, 1987.

[2] Question 51.

[3] Question 62b.

To establish whether residents' social and recreational activities would be affected by the facility, respondents were asked to identify those activities they believe would be affected by visual impact. Cross-country skiing, snowmobiling, RV activities, entertaining friends/relatives and leisure/relaxation activities were among those indicated as being affected.

The importance of the visual attributes of the area is illustrated in the responses to the question regarding characteristics liked the most about the area.[1] Two comments relating to visual factors were ranked relatively high: 'open space' and 'attractive area' were mentioned by 90% (217) and 75% (181) of respondents, respectively. 'Absence of industrial development' was mentioned by 86% (207 respondents). It is apparent that West Lincoln possesses visual characteristics which are held in high regard by the area residents.

When questioned specifically about being able to see the industrial facility and the effect on their household, 31% of the respondents thought that their household would be affected.[2] When asked to comment further, 21% of those who thought they would be affected (13 respondents) said their household would experience of a change in lifestyle or reduced standard of living, and that everyday life would be made more uncomfortable[3] (see Table 9.10).

The visual intrusion of the OWMC facility in an area that has never experienced such a presence could result in a change in community character and cause concern for the residents.

Evaluation Without Mitigation

The proposed hazardous waste management facility is expected to have a lifespan of at least 20 years. Throughout, it will be a constant visible reminder to most area residents of the incongruent nature of the industrial facility in relation to the rural character of the area, particularly to those residents spending most time on their property. Awareness of the facility's visibility will be heightened during the construction phase (EDA Collaborative Inc. 1987).

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[1] Question 59. 'Which [of the following] characteristics, if any, do you like most about this area?'

[2] Question 85f.

[3] Question 85b.

TABLE 9.10

CHANGE TO HOUSEHOLD ACTIVITIES RESULTING FROM VISUAL INTRUSION

	Number of Responses	Percentage of Actual Respondents
Change in lifestyle/lifestyle hurt/standard of living reduced/life everyday more uncomfortable	13	21
Stress factor	6	10
Decrease in property values/reduced equity	6	10
Reduced outdoor activities	3	5
May move	3	5
Move business	3	5
Don't know/not specific	30	48
Total Responses	64	

Source: IER, Phase 4B, Resident Interviews, 1986. Residents were asked 'For each factor identified in 85a as having an effect on your household, please describe how such a change would cause you to change your household activities'. (Question 85b)

Residents within the high visual impact zone will experience the greatest visual intrusion. They will have an opened, unscreened view dominated by the facility. Within the moderate visual impact zone, the facility will be less domineering due to the greater distance from the residences. The new physical features gained, namely roads, buildings, ponds, landfill, and a berm will not be in concert with the surrounding physical features. More importantly, the existing physical features that will be lost, such as woodlots, shrubbery, marshy areas and croplands, are features which the residents appreciate.

The direct visual impact arising from the presence of the complex will affect the rural character of the community. No longer will there be an unobstructed view of open space and farmland; the landscape will now be parceled off with man-made or artificial barriers. As a result of a number of impacts, including visual intrusions, the rural character of the area will be changed and activities disrupted. Residents may not feel as satisfied with their surroundings as they once were, leading to out-migration of households or negative attitudes towards the community. This could undermine the stability and cohesion of the area, further affecting the community character and creating more dissatisfaction.

The implications of the visual intrusion on these social factors will be discussed further in Chapter 10, 'Special Impacts'. However, it is important to note that the indirect effects of the visual intrusion add significantly to the degree of impact of this nuisance impact.

The OWMC facility will impose a visual impact on the local community. Residents will at first be quite sensitive to the physical intrusion, because of the importance residents place on the rural agricultural nature of the area. Sensitivity to the change is expected to be highest during the construction and initial start-up phase, especially for residents living in the high impact zone. Over time, it is anticipated that sensitivity may decrease somewhat as residents become more accustomed to the presence of the facility (EDA Collaborative Inc. 1987).

Impact Management Strategy

Impact management strategies should attempt to minimize the visual contrasts between the existing environment and the proposed OWMC facility. By reducing both the degree of contrast between the facility and the environment and the actual visual exposure levels, the overall visual impact of the facility can be minimized (EDA Collaborative Inc. 1987).

Suggestions for on-site measures include a range of treatments for the stacks and buildings, site planning, site grading, berms and landscape planting. Off-site measures include private and public land treatments.[1] The visual consultant has also suggested "an ongoing monitoring process of the visual changes that take place over the construction period and operating life of the proposed facility" (EDA Collaborative Inc. 1987, 75).

OWMC (1988) has committed itself to the following visual impact mitigation and monitoring measures:

- identification of the specific areas of existing on-site vegetation which should be preserved based on the density, quality and potential for survival of the vegetation, in order to provide permanent screening. In addition, existing vegetation should also be used as temporary screening during construction where long-term planning calls for their removal.
- shaping the proposed buffer berms to a more undulating and gentle outer slope. These slopes will be at least 1:5, with rounded crests and smoothly blended bases. Where no other forms of screening exist, a peripheral berm will be maintained where exposures to the surrounding lands, residences and roads are located in high impact areas.
- straight-in entrance and exit roads that allow wide open visual penetration into the facility and the landfill areas will be avoided. Entrance roads will utilize an offset alignment with plant materials and mounding to effectively screen visual penetration to the facility and maintain visual harmony with the surrounding area.
- signage for the facility will be developed as a themed family of signs, incorporating the basic requirements of identification, direction and safety.
- site security fencing (i.e., chain link) will be integrated with tree, shrub and thicket planting to be as inconspicuous as possible.

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[1] Details of these measures can be found in EDA Collaborative Inc. Site Assessment, Phase 4B: Visual Impact. 1987. Prepared for the Ontario Waste Management Corporation.

- additional large size canopy trees will be planted along the existing major and secondary roads in the site vicinity.
- the above-ground hydro line will be located and aligned so as not to direct attention to the facility.
- individual screening treatments for the most exposed residences (i.e., high and moderate impact) will be undertaken. These treatments may include the planting of dense, coniferous hedgerows, construction of landscape berms and planting, and/or privacy fence construction. The most appropriate treatment for each of these households would be assessed on a residence-by-residence basis.
- in addition to mitigation, the general public will be encouraged to participate in a visual monitoring program.

Evaluation With Impact Management Strategy

The visual character of the community in the site vicinity will change as a result of the OWMC hazardous waste management facility. No longer will the area be characterized by rural 'open space'. Rather, the country atmosphere will be broken by the presence of an industrial complex. In effect, the OWMC facility is a contradiction of the existing character and image of the area. This contradiction negatively affects the character of the local community in that the qualities which attracted and satisfied the area residents in the first place would be disrupted. Repercussions will be felt in the levels of community satisfaction and cohesion, especially during the construction period as neighbouring households first realize the change that will occur on the landscape.

Mitigation measures should reduce both the contrast of the proposed facility with the surrounding environment, and the number of people and areas exposed to it. A potential reduction in the number of households in the high impact zone from 24 to 6 is possible; the number of households in the moderate impact zone may potentially change from 34 to 29 (EDA Collaborative Inc. 1987). The suggested impact management strategy will not totally overcome the impacts; however, it should reduce the degree of impact to the local community. Some residents will see the facility while using their properties for outdoor activities such as farming or barbecuing, or while travelling on roadways exposed to the site. This reminder of the facility and the negative feelings many residents have for it will act as an irritant for some people. It is not clear whether Bethel Community Church and the proposed trailer park will be among the features that are positively affected by the suggested mitigation measures.

9.5.3 LIGHTING INTRUSION

Introduction

West Lincoln is primarily a rural community and as such experiences evenings which are relatively light-free. The development of the OWMC facility will change this, as an all-night security lighting system will be installed. Use of additional temporary mobile banks of lighting in the landfill area are not anticipated under normal conditions (Monenco Ltd. 1988).

Lighting is considered an impact since it will result in a notable change to the existing rural-agricultural community character. Some residences may experience direct views of on-site lighting; others will experience a constant night-time "glow" from the security lighting at the facility (EDA Collaborative Inc. 1987). This glow would serve as a constant reminder to residents of the OWMC facility. Outdoor evening activities could be affected negatively and could result in a feeling of lost privacy, given that the rural night would no longer be as dark as it once was.

Approach

The approach used in the analysis and evaluation of the lighting impact was based on technical information provided by Monenco (the engineering consultants) and EDA Collaborative Inc. (the visual impact consultants). From this information, lighting impact zones were established. The lighting impact zones were drawn on a map of dwelling locations. This information as well as data from the resident interviews were used to identify those households and the number of residents who would be affected by the night lighting.

In analyzing the degree of impact, it is important to assess the perceptions which the public has towards the potential impacts, as they can often accentuate the problem. Consideration has been given to public perceptions with respect to the lighting and its implications on individual households and community.

In the assessment of the potential lighting impacts, certain assumptions and conclusions were made based on professional judgement as well as experiences at other similar facilities in North America.

The analysis of the lighting impact considers both the operational and construction phases associated with the facility.

Assumptions

Certain assumptions were made in the analysis. These are as follows:

- lighting will be directed downward and inward and not towards residential properties;
- the landfilling operations will be conducted Monday to Friday, during an 8-hour day shift;
- if there is an overflow of material to be landfilled, the landfilling operation will extend beyond the 8 hour shift. However, this should happen infrequently;
- the lighting used during the construction phase will be similar to that used in the operational phase (i.e., for security only - no night construction envisaged).

Lighting Impact Zone

To assess the degree of lighting intrusion, two lighting impact zones were established based on consultations with EDA Collaborative Inc. and Monenco Ltd.. Essentially the zones were developed by enclosing the high and moderate visual impact zones to form two continuous areas of impact.[1] It must be noted that the zones are not defined by a rigid line, but are an approximate indication of the degree of impact. The visual impact zone was derived by assessing the views of the site from the community. It is assumed that lighting intrusion would be related to the residents' ability to see the facility. All residences and facilities located between the site and the outer boundary of the moderate impact zone are considered as being impacted by facility lighting.

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[1] Refer to Chapter 5, 'Study Areas', for the discussion on the visual and lighting impact zones.

Analysis

The degree of impact will vary. Generally, fewer residents will be affected by the lighting system closer to the facility where the lighting will have greatest (high) impact. As one moves out from the site, more residents will be affected but to a lesser (moderate) degree. Seasonal variation in lighting impact can also be anticipated; when there are no leaves on trees, lighting visibility would increase. A total of 314 residents[1] and 83 households[2] have been identified within the lighting impact zones.

Table 9.11 identifies the residences located within the lighting impact zones; Figure 9.3 provides the locations of these residences.

Community and Recreation Features

There are four community and recreation facilities located within the lighting impact zones: the Bethel Community Church, the Silverdale Gun Club, the Niagara Regional Sportsmens Gun Club and the proposed trailer park. All four are located within the moderate impact zone. The latter facility would be sensitive to lighting since campers would be distracted from the natural night-time setting by the "glow" from the site. Some camping does occur at both of the gun clubs.

Experiences at Other Facilities

A number of other similar facilities throughout North America were contacted. The only comments concerning on-site lighting intrusions were noted from residents near the Tricil facility in Sarnia, Ontario. Two residents located approximately 1.0 and 1.5 km from the facility reported that they do see the lights which resemble a village at night, but neither were bothered by the lights.

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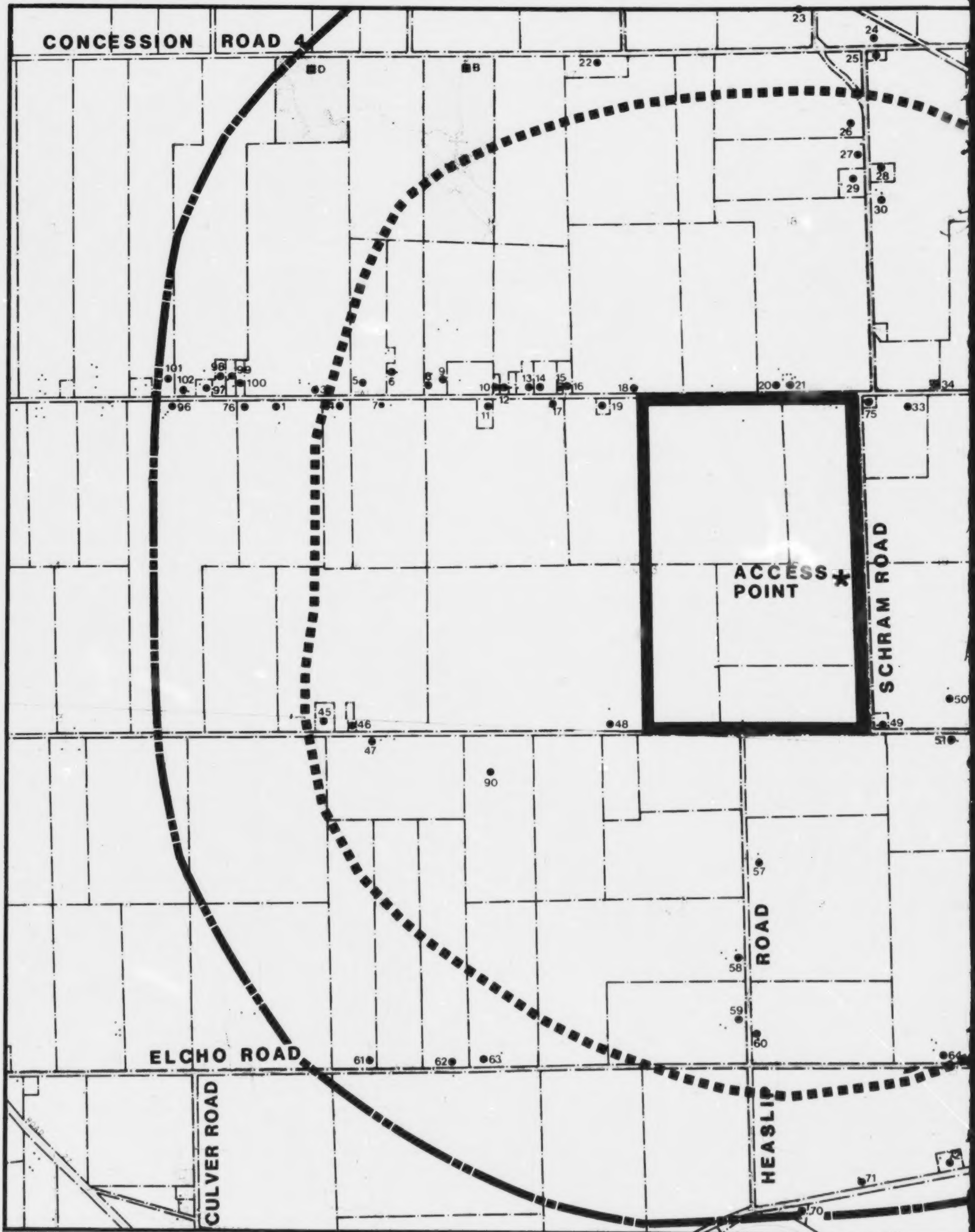
[1] This information was calculated by counting the actual number of residents within each household as identified by the interview results. If the actual number was not known, it was calculated by using the average number of residents per household (3.6) in Gainsborough Township as reported by Statistics Canada (1981 Census Data).

[2] This information was calculated by counting the actual number of residences within each zone.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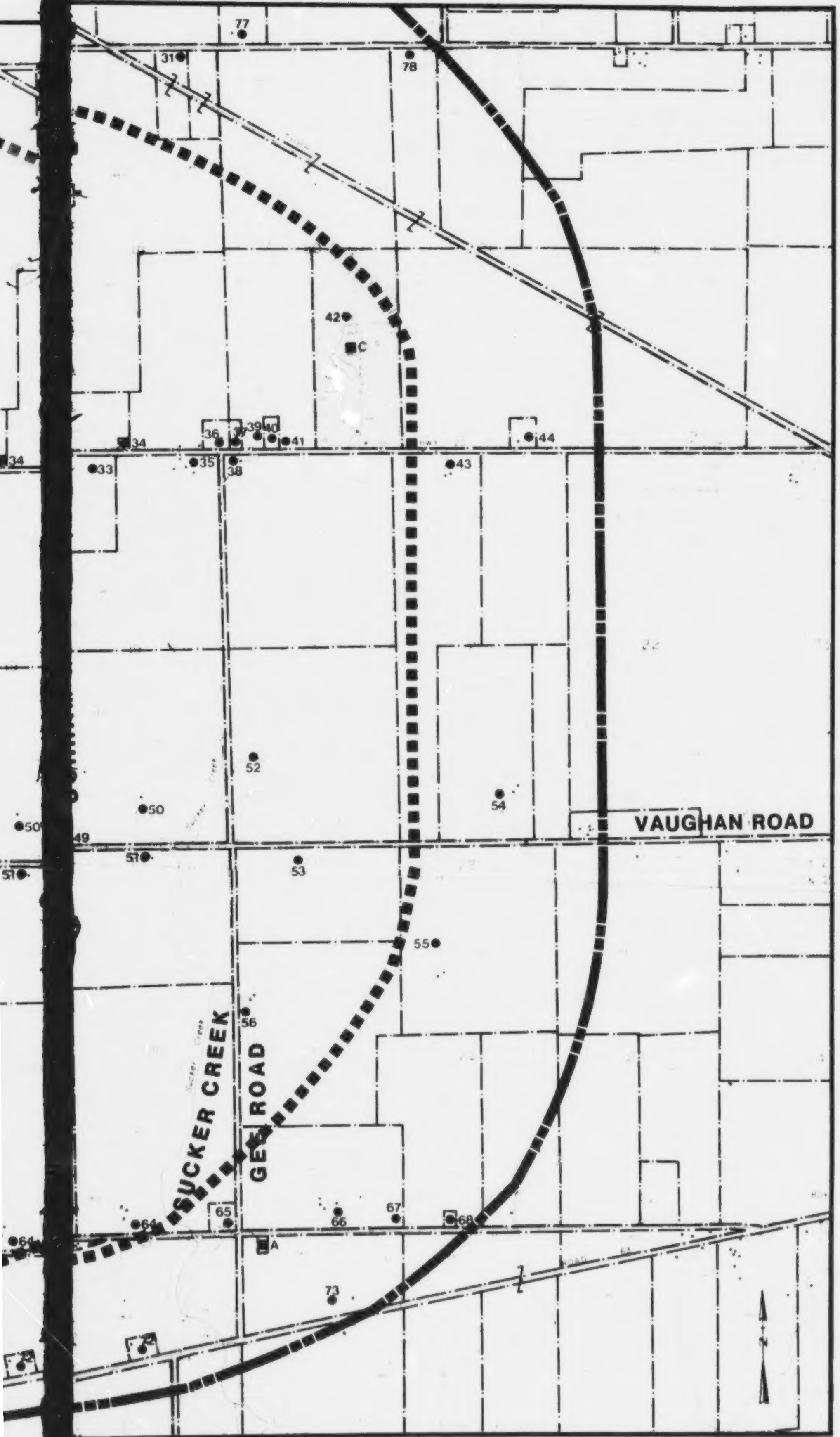

OWMC Ontario Waste Management Corporation

Consultant:

ier

Legend:

━■━■━ **Moderate Impact Zone**

■■■■■■ **High Impact Zone**

● 10 **Residences**

Note: There are no Residences in the Area not Covered by the Map.

━━━ **Preferred Site**

■ **Community/ Recreation Features**

- ■A **Bethel Community Church**
- ■B **Silverdale Gun Club**
- ■C **Proposed Trailer Park**
- ■D **Niagara Regional Sportsmens Gun Club**

Scale 1:20,000

Metres

250 0 500 1000

LIGHTING IMPACT ZONES

March 1988 **Figure 9.3**

TABLE 9.11

PROPERTIES WITH RESIDENCES WITHIN LIGHTING IMPACT ZONES

RESIDENCE NUMBER	ASSESSMENT ROLL NUMBER	RESIDENCE NUMBER	ASSESSMENT ROLL NUMBER
HIGH IMPACT ZONE			
4	10 - 112	36	5 - 125
5	10 - 175-5	37	5 - 124
6	10 - 172	38	6 - 302
7	10 - 111	39,41	5 - 123 (3 households)
8,9	10 - 171 (2 households)	40	5 - 123 - 1
10	10 - 170	42	5 - 122
11	10 - 110-1	45	10 - 86
12	10 - 169	46	10 - 84
13	10 - 166	47	7 - 272
14	10 - 165	48	10 - 82
15	10 - 164	49	10 - 77
16	10 - 163	50	10 - 76
17	10 - 110	51	7 - 264
18	10 - 162	52	6 - 114
19	10 - 108	53	6 - 270
20,21	10 - 160 (2 households)	56	6 - 111
26	10 - 17	57	7 - 015
27	10 - 16	58	7 - 021
28	10 - 11 - 2	59	7 - 020
29	10 - 16 - 5	60	7 - 014
30	10 - 11	64	7 - 240
33	10 - 101	75	10 - 103
34	10 - 156	90	7 - 271
35	10 - 100		
MODERATE IMPACT ZONE			
1,76	10 - 113 (2 households)	66,67	6 - 198 (2 households)
3	10 - 173	68	6 - 197
22	10-236	70	7 - 093 - 1
23	4 - 25	71	7 - 143
24	4 - 248 - 1	72	7 - 144
25	10 - 11 - 5	73	6 - 255
31	10 - 228	77	5 - 102 - 5
43	6 - 301	78	5 - 139
44	5 - 121	96	10 - 114
54	6 - 287	97	10 - 176
55	6 - 269	98	10 - 175 - 5
61	7 - 247	99	10 - 175
62	7 - 245	100	10 - 174
63	7 - 244	101	10 - 178
65	7 - 240 - 5	102	10 - 177

See Figure 9.3 for the location of these properties.

Public Perceptions and Concerns

When residents were given the opportunity to voice any concerns about the facility, direct comments about lighting intrusion were not made. As noted previously, resident concern about nuisance impacts, such as night lighting, is not as significant as that regarding potential risks associated with the facility. In the resident interviews, respondents were asked whether they felt their household would be affected by the night-time light from the OWMC facility. It seems that many residents are not aware that the facility will use night lighting and that they will be affected by it (Table 9.12).[1] As well, there are a few respondents who feel that they will be affected but, it can be assumed, will experience limited lighting impacts since they do not live in either of the two lighting impact zones.

The degree of expressed importance of this nuisance was the least compared to other nuisances. Only 12% of respondents felt that the use of night-time outdoor lighting would affect their households. Those noting that they would be affected by outdoor lighting cited the following impacts: stress, reduced outdoor activities and a change in lifestyle.[2]

Evaluation of Impact Without Mitigation

The degree of impact facility lighting will have on the residents within the defined lighting impact zones cannot be quantified, but it is evident that the lighting will definitely create a change to the existing environment for the duration of the facility life. The change will be noticeable at night when the "glow" from the facility will be visible. Since it is assumed that the lighting will not be directed onto residential properties, no direct impacts on neighbouring properties are anticipated.

Greater impact will occur when landfilling must be conducted beyond the eight hour period and during seasons when daylight hours are short and lighting is required to complete a full 8-hour shift. This would require much stronger lighting to allow an entire landfill area to be illuminated, therefore creating much more than a "glow", particularly for nearby residences. The use of lighting to permit landfilling beyond the 8 hour shift would be "infrequent" and would be required primarily during the winter season.

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[1] Question 85d.

[2] Question 85d.

TABLE 9.12
PERCEPTION OF LIGHTING IMPACT
AND HOUSEHOLDS IN LIGHTING IMPACT ZONES

<table>
<tr><th></th><th>High Impact Zone</th><th>Moderate Impact Zone</th></tr>
<tr><td>Actual number of households</td><td>51</td><td>32</td></tr>
<tr><td>Number of households who believe they will be affected by lighting[1]</td><td colspan="2">23</td></tr>
<tr><td>Number of households who believe they will be affected by lighting intrusion and will be affected[1]</td><td>9</td><td>4</td></tr>
<tr><td>Number of households who are not aware that they will be affected by lighting intrusion[1]</td><td>42
(82% of households)</td><td>28
(88% of households)</td></tr>
<tr><td>Number of households who believe they will be affected by lighting intrusion but are not in either impact zone[1]</td><td colspan="2">10</td></tr>
</table>

Source: IER, Phase 4B, Resident Interviews, 1986. Question 85d.

Notes:

1. Respondents were asked the following question:
'Based on what you currently know about the facility, would you indicate whether you think your household would be affected by the use of outdoor lights on-site all night ?' (Question 85d)

As mentioned, the intrusion of lighting will change the ambient rural character of the area and could result in a change of community satisfaction. Disruption of the high degree of satisfaction presently experienced by the residents could impact resident behaviour and lead to changes in community stability and cohesion. The lighting could provide a constant reminder to residents of the existence of the facility, and for some individuals it may create or add to stress.

The proposed trailer park/campground is located within the moderate lighting impact zone, where the "glow" may detract from the natural night-time setting. This impact would also be experienced by members of the Silverdale Gun Club and the Niagara Regional Sportsmens Gun Club who camp overnight on the club's property. The change in the night-time level of lighting would also be significant to residents who enjoy spending summer evenings in their backyards, especially those located within the high lighting impact zone. The night lighting may also prove significant to some other residents.

There are no formal lighting standards with which the OWMC facility must comply; however, the facility lighting will be visibly out of character with the rural nature of the area. The actual degree of impact will be influenced by on public perceptions. Lighting will impact some residents more than others depending on their use of the outdoors in the evening and their location in relation to the lighting impact zones.

While night-time lighting may cause stress, result in a reduction in outdoor activities, and change a household's lifestyle somewhat, the proportion of residents who expect outdoor night-time light use to be a nuisance is relatively small. Over time, this sensitivity towards the facility lighting is expected to diminish as the residents become more conditioned to the change.

Impact Management Strategy

Direct impact on residents would be minimized if the lighting is controlled to reduce the degree of contrast between the facility and the existing environment. This could be accomplished by ensuring that the lighting is directed downwards and inwards, thereby eliminating direct lighting onto residents' property (EDA Collaborative Inc. 1987). Lighting of buildings, stacks and other built features should be avoided. OWMC should also keep the occurrence of temporary lighting after dark to a minimum, monitor the use and noted impacts of this intense lighting, and make adjustments as necessary.

As with visual impacts, mitigation measures to reduce impacts can be instituted on-site and/or at the residence (Ontario Waste Management Corporation 1988).

On-site, lighting will be kept inconspicuous wherever possible and directed toward the ground, avoiding uplighting of buildings and stacks. Light fixtures will be attached under roof overhangs or on building sides and directed downward. All free-standing fixtures will be low profile and not exceed 4 metres (12 feet) in height. Outdoor areas requiring lighting will be visually screened from the surrounding countryside to minimize light pollution beyond the site boundary.

Plantings at the affected residences, between the residences and the facility, and at the facility will also greatly offset visual, and consequently lighting, impacts. However, these plantings will not completely mitigate lighting impacts. Other previously noted impact management measures for visual impacts may offset lighting impacts.

It will be more difficult to mitigate the indirect 'glow' from the facility, as it results from the cumulative effect of all lighting and mitigation measures. The glow will be more visible in the winter because of the reflective nature of snowcover and loss of screening by tree leaves (EDA Collaborative Inc. 1987).

Evaluation With Impact Management Strategy

Implementing the impact management strategies described above would reduce the degree of lighting impact but not eliminate it. Local residents would still experience disruption of their outdoor evening activities, and possible disruption of privacy and sleeping habits. It has been suggested that the sensitivity of viewers will vary with consideration of three factors: the viewers' activity, their awareness of the facility, and their perception of the facility as a threat to local community values and goals (EDA

Collaborative Inc. 1987). The glow from facility lighting would also serve as a reminder of the OWMC facility, which is viewed negatively by many residents. It is anticipated that viewer awareness will diminish with time, as people become accustomed to the change.

9.5.4 DUST

Introduction

An increased amount of dust will be evident in the area around the site as a result of the construction and operation of the proposed facility (Ontario Research Foundation 1987). The dust will originate from a number of activities:

- land clearing
- ground excavation
- loading and unloading of excavated materials into trucks
- stockpiling excavated materials
- movement of equipment over exposed soil surfaces
- traffic tracking dust from exposed surfaces onto paved roads off-site

These activities are common to both the construction phase and landfill operations. The following additional activities associated with the construction phase will also generate dust:

- movement of equipment, trucks and vehicles over temporary unpaved roads
- berm construction
- building construction
- blasting

A final potential source of dust is exhaust emissions from cars and trucks associated with the site.

Dust is generated in one of two ways: through wind erosion or equipment/vehicular movement over exposed surfaces. For example, land clearing and ground excavations leave soil surfaces exposed; soil particles can then be picked up and carried off-site by the wind or equipment.

As one of the impacts associated with the facility, an increased amount of dust has the potential to disrupt both the daily activities and use and enjoyment of property for nearby residents and the operations of nearby community and recreation features. Dust from the site may settle on indoor and outdoor surfaces, such as the siding on residences, vegetation, windows, furniture, swimming pools and clothes hung out to dry. This could result in a need for more frequent cleaning and the additional time, effort and cost associated with doing so. More seriously, individuals who are sensitive to dust due to allergies or respiratory ailments may find that their health problems are aggravated given a certain level of dust in the air.

Approach

The assessment of dust as a nuisance impact was undertaken by applying a dust impact zone determined by the Ontario Research Foundation (ORF). The zone was overlain on a map of properties and dwelling locations. This data, along with information from the resident interviews, was used to identify households and residents who would be affected by an increase in dust levels. Similarly, the impact zone was overlayed on a map of community and recreation features to identify those that would be affected by increased levels of dust. Consideration was given to experiences at other waste management facilities and to the perceptions of residents concerning dust and its implications for their use and enjoyment of property.

The analysis that follows takes into consideration both the construction and operation phases.

Assumptions

Several assumptions were applied in the analysis of dust impact:

- construction activities will occur 8 hours a day, 5 days a week.
- construction will be completed within 18 months.
- landfill operations will occur 8 hours a day, 5 days a week.
- site life is at least 20 years.

In the determination of the dust impact zone, ORF employed a series of 'worst case' assumptions; these assumptions apply to this analysis as well (Ontario Research Foundation 1987).

Dust Impact Zone

As identified in Chapter 5, 'Study Areas', a dust impact zone was determined by ORF to assist in the assessment of dust impacts associated with operations.[1] The dust impact zone was developed after consideration of both the activities that could generate dust and the standards established by the Ontario Ministry of Environment for dust as a nuisance. The zone extends over a 460m radius around the site boundary and represents the area within which dust could be perceptible as a nuisance under short-term worst case conditions.

Analysis

Fifteen households and an estimated 54 residents are located within the 460m dust impact zone.[2] Figure 9.4 identifies these households. Dust impacts may be more significant for an estimated 24 of these residents, as they are expected to be at home more often than other household members.[3]

The precise prediction of dust impacts is difficult because of the large number of assumptions made in the analysis and uncertainty regarding the effectiveness of dust suppression measures. Because of this, the dust analysis was carried out on a 'worst case' basis. It is anticipated that under even the most adverse conditions, dust impacts would be limited to the immediate vicinity of the site, and occur infrequently and be of short duration (Ontario Research Foundation 1987).

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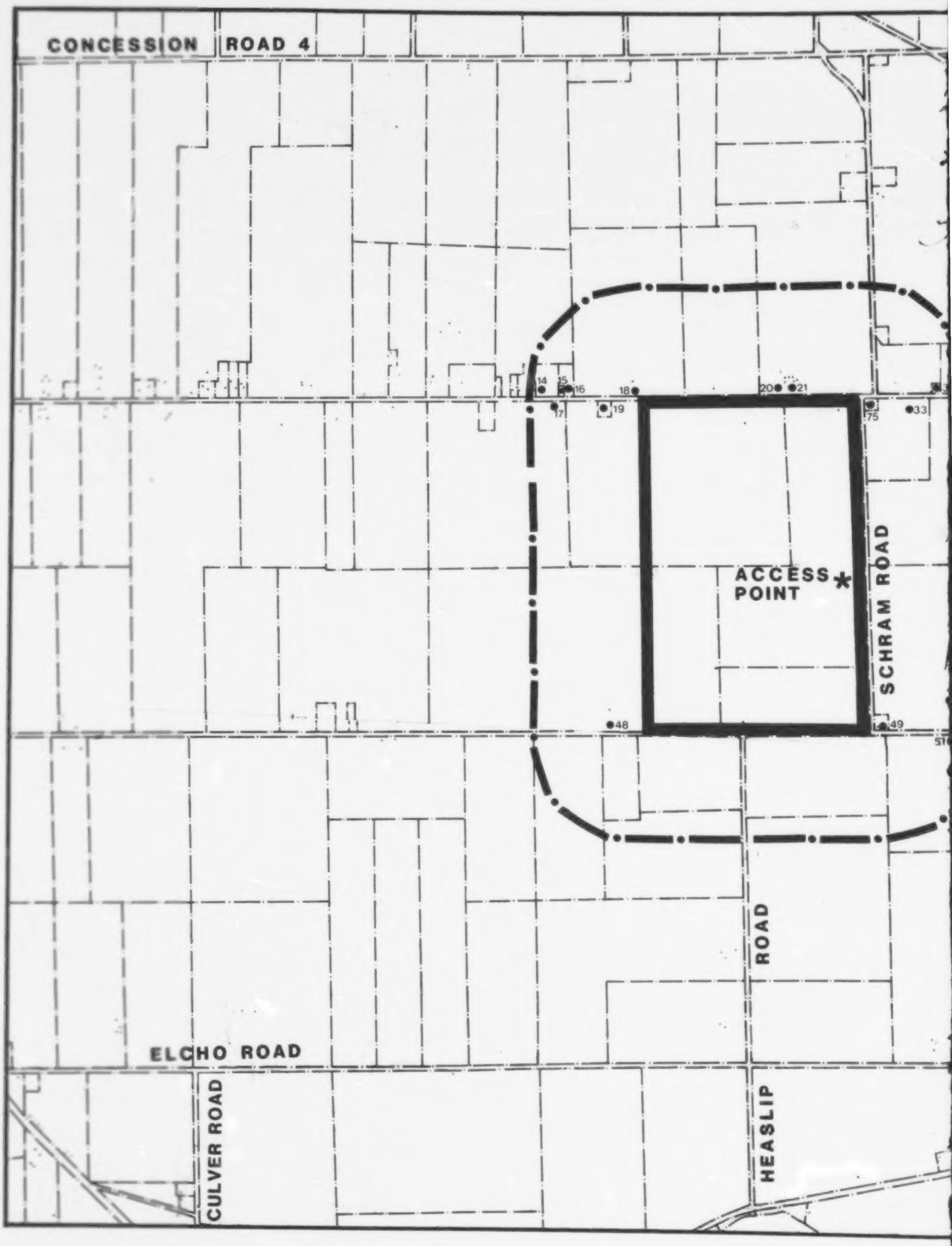
[1] For more details, see Ontario Research Foundation. Phase 4B, Site Assessment: Atmospheric Conditions. 1987. Prepared for the Ontario Waste Management Corporation.

[2] Information from the Resident Interviews was used to determine the number of households; for households not interviewed the number of residences was used to estimate the number of households.
The estimate of the number of residents is the sum of:
i) the number of residents reported in interviewed households, and
ii) for households that were not interviewed, the average household size (3.6) for Gainsborough Township (1981 Census) multiplied by the number of residences

[3] Persons spending most time on their property include preschoolers (0 to 4 years old), homemakers and others working at home, retired persons (65 years and older), and farm operators. This information was available only from the interview results. Non-surveyed households were assumed to have the same characteristics as those that were surveyed. A factor of 1.4 (based on the survey response rate of households within the dust impact zone) was used to determine this value, based on 17 'sensitive' residents in the surveyed group.


CONCESSION ROAD 4
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ACCESS POINT
SCHRAM ROAD
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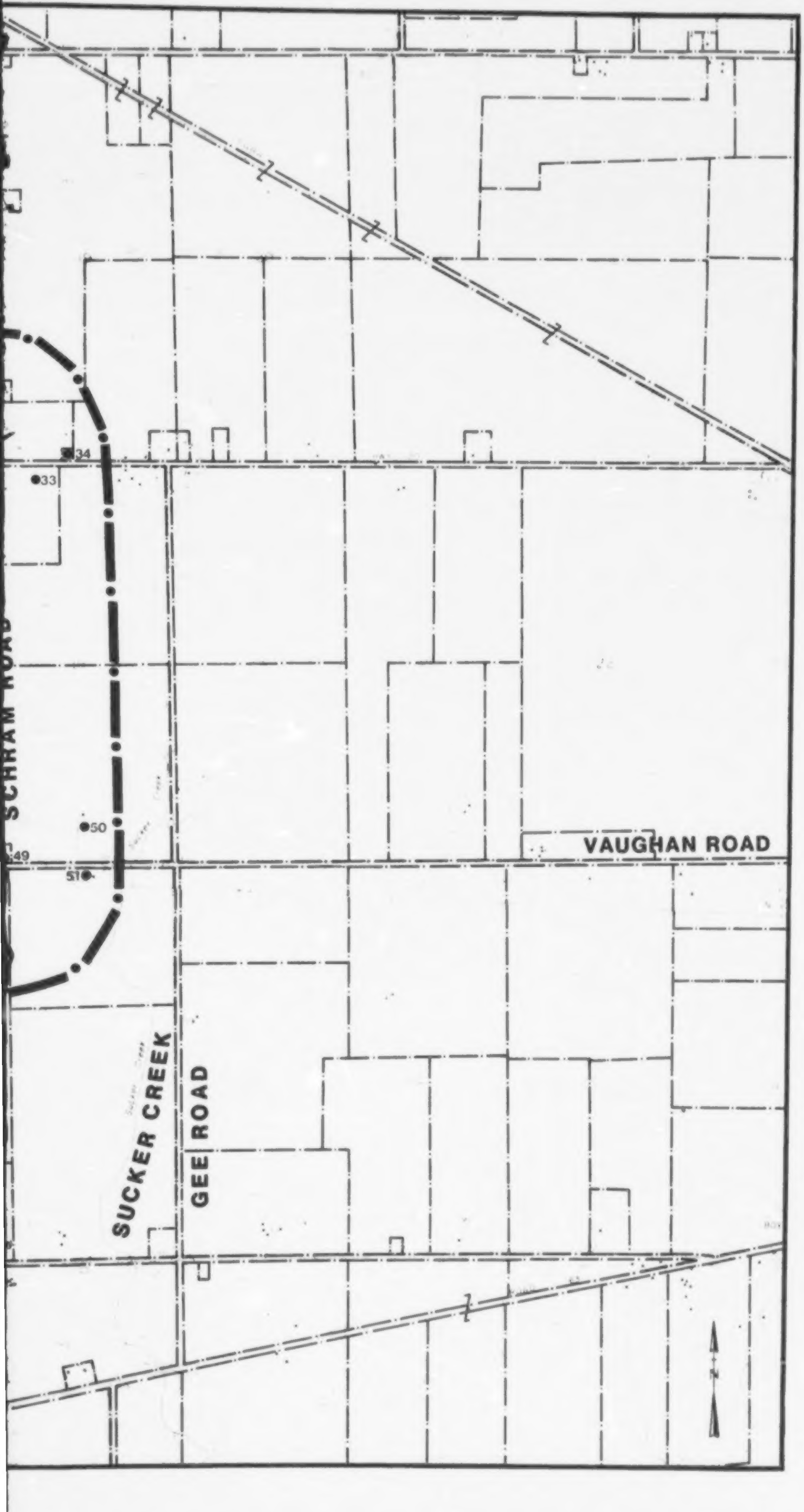
ROAD
ELCHO ROAD
CULVER ROAD
HEASLIP



OWMC Ontario Waste Management Corporation

Consultant:

ier

Legend:

—•— **Dust Impact Zone**
(460 metre zone)

● 36 **Residences**

▬ **Preferred Site**

Scale 1:20,000

Metres
250 0 500 1000

DUST IMPACT ZONE

March 1988 Figure 9.4

Community and Recreation Features

There are no community and recreation features located within the 460m dust impact zone. As noted previously, it is possible that dust generated by the site operations or construction activities will be not contained within this distance at all times, and it is conceivable that those community and recreation features around the site (but more than 460m away) may occasionally be subject to increased dust. No significant effects, however, are predicted beyong 460m (Ontario Research Foundation 1987).

Experiences at Other Facilities

Dust does not appear to be a significant nuisance at existing waste management facilities visited by IER staff. No dust problems were noted at the Stablex facility in Blainville, Quebec or the Rollins Environmental facility in Deer Park, Texas. Although generally not a problem at the Tricil facility near Sarnia, dust is occasionally generated from stock piles of fly ash used in the solidification process.

Dust has been a problem in the past at the Rollins facility in Baton Rouge, Louisiana; however, the dust was largely associated with the landfarming activities[1] which are no longer practiced. The current levels of dust generated by the landfilling operations and other activities at this site are minimal in comparison to the past landfarming activities. At the Baton Rouge facility, the nearest residence is approximately 200m from the site boundary.

Public Perceptions and Concerns

Public concern with respect to dust is very low compared to other nuisance impacts, and residents are generally more concerned about the potential risks associated with the facility than the nuisance effects. Comments from the public show that residents are not significantly concerned with either the present levels of dust or the potential increase in dust due to the OWMC facility. Only 4% of those interviewed (primarily those from farm households) identified dust as a current problem in the community.[2] Current sources of dust would include traffic on unpaved roads and farming activities.

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1. Landfarming involves working non-toxic liquid waste into the ground using tilling practices.
2. Question 60.

Forty percent (40%, or 95 respondents) of those interviewed perceived that their household would not be affected by dust from the proposed facility; 34% (80 respondents) felt that their households would be affected; 24% (57 respondents) were unsure whether their household would be affected by dust.[1] Most of those respondents who anticipated dust impacts live near the site. Respondents offered insight into how their households would be affected. The changes most frequently anticipated included closing windows and doors, dusting or cleaning their homes more often and reducing outdoor activities.

During a meeting with residents, concern was expressed that the dust may affect residents with respiratory problems or allergies.

Evaluation Without Mitigation[2]

Site activities are estimated to double the dust levels currently experienced over the long term at the site boundary. Within 1 km of the site (1000 metres), however, the dust added will be less than one third of the current level and is expected to fall within MOE requirements (Ontario Research Foundation 1987).

Under short-term, 'worst case' conditions (high dust generation), the MOE short-term standard (1/2 hour) for total particulates may be exceeded. However, the standard is presently exceeded under typical rural conditions where farming activities and unpaved roads contribute to the generation of dust.

The short-term dust nuisance criterion (representing the level at which the dust is perceptible to residents in terms of soiling) may be exceeded infrequently within 460m of the site(Ontario Research Foundation 1987).

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[1] Question 85c.

[2] The Ontario Research Foundation's determination of the 460 metre impact zone assumes watering of roads twice a day. Mitigation would include more frequent watering and other measures.

The dust impacts anticipated will generally be in the nature of occasional inconvenience to residents, including for instance more time and effort for dusting and cleaning and perhaps the closure of windows and doors. It is not certain, but according to the background data provided by ORF and evidence from existing facilities elsewhere, it is unlikely the level of dust will seriously affect household activities.

The information provided by ORF and experiences at existing waste management facilities visited by IER staff suggest that the dust impacts are likely to be short-term, with impacts experienced occasionally during the construction period and periodically throughout the 20 year (minimum) life of the facility. The dust levels will be similar to those generated near a construction site for a new residential subdivision or a high rise building (Ontario Research Foundation 1987). However, due to the longer duration of the impact associated with the operations of the proposed facility, the effects will be of greater significance to nearby residents.

Fifty-four (54) residents living within the 460m impact zone will experience increased levels of dust. For an estimated 24 of the residents, who have been identified as spending more time at home and on their property, the impacts could be more significant. The significance of the impact will depend partly on the individual and his/her perception of dust as a nuisance. It is possible that some residents may view the dust impacts as more significant by virtue of their assocation of the dust with an undesirable facility.

The significance of the dust impact may also depend on residents perceptions of OWMC's response to any complaints associated with dust. Furthermore, any disruption of daily activities and the use and enjoyment of property could influence residents' satisfaction with the community and potentially affect the stability and/or cohesion of the community (for example, some residents may decide to move out of the area).

For some residents, the increased dust levels could aggravate existing health problems. As no study was conducted to identify such individuals, it is not known whether any live within the dust impact zone. Nor is it certain whether the dust load will reach levels that will affect such individuals. However, given that about 4% of the general population suffers from asthma, it is possible that a few individuals may be bothered by increased dust levels.[1]

Impact Management Strategy

A number of mitigation measures can be applied to reduce dust impacts or minimize the potential for dust impacts. Possible mitigation measures suggested by ORF include the following:

- watering of unpaved roads
- application of chemical wetting agents to inactive portions of the landfill and construction site.
- enclosure or covering of inactive storage piles
- reduction of travel speed of construction/landfill equipment and other vehicles
- wetting of soils to be bulldozed.

The effectiveness and appropriateness of these measures is documented in ORF's report (Ontario Research Foundation 1987); however, some brief comments are noted here.

Watering of unpaved roads can be adjusted to conditions as required. Enclosure or covering of inactive storage piles would eliminate wind erosion of materials; however, wind erosion of active storage piles would still be possible. Reduction of the travel speed of construction and landfill equipment may be difficult to control.

While the methods noted above will assist in reducing the amount of dust generated, they will not eliminate it, and residents will still experience increased dust levels. There are several other impact management measures available that can address the expected increased dust load.

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[1] Personal communication with Dr. Broder, Director of the Gage Research Institute, July 20, 1987.

Monitoring during facility construction and operation is necessary to ensure the effectiveness of mitigation measures and determine the level of dust being generated (Ontario Research Foundation 1987). OWMC will undertake ongoing monitoring of dust emissions. If dust impacts are determined to be more frequent than anticipated, OWMC can consider assisting residents in the clean up of their homes and property.

Consideration should be given to those residents who have health problems that are aggravated by dust through OWMC's 'Special Case Policy'.[1] Assistance could be given to install air filters, and/or compensation provided for medical expenses in cases where a direct relationship is established between dust and health problems.

The minimization of dust emissions will be part of normal construction practices (Ontario Waste Management Corporation 1988). However, these emissions will also be controlled, if required, by appropriate phasing of construction activities. In addition, on-site watering will control dust emissions. The effectiveness of watering on unpaved roads on-site and inactive areas of the construction site depends on the frequency of application. Twice daily coverage is estimated to reduce dust emission by up to 50 %. More frequent applications could result in close to 100 percent effectiveness.

Dust will be further minimized by wetting and covering (including compaction and revegetation) of inactive areas (Ontario Waste Management Corporation 1988). Other mitigation measures include (Ontario Waste Management Corporation 1988):

- enclosing or covering inactive storage piles to reduce wind erosion and reduce dust emissions;
- applying grass cover to completed sections of the berm;
- control of equipment and vehicle speeds on-site to reduce emissions;
- construction of fences on landfill working areas to act as wind screens.

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[1] Under this policy, residents' complaints that are not addressed by other formal OWMC policies would be evaluated on a case-by-case basis. For more detail, see Ontario Waste Management Corporation. Environmental Assessment. Volume V: Site Assessment. 1988.

OWMC will also undertake ongoing monitoring of dust emissions (Ontario Waste Management Corporation 1988).

It is clear that good management practices on-site can contribute significantly to minimizing the amount of dust generated. Steps should be taken to ensure that measures are followed at all times to minimize dust generation. A complaints bureau will be established to ensure that any problems regarding dust and other nuisances are promptly and appropriately addressed (Ontario Waste Management Corporation 1988).

Evaluation With Impact Management Strategy

Despite mitigation measures, some residences are expected to be affected by increased dust levels on an occasional basis. This can disrupt the activities of residents in a number of ways. More time and effort may be required for dusting and cleaning; windows may need to be closed. Outdoor activities such as gardening, barbecuing, or child's play may be affected negatively. It is possible that some residents may experience aggravation of existing respiratory ailments.

9.5.5 ODOURS

Introduction

There is a potential for odours to be produced at the proposed facility. Odours could originate from several sources (Ontario Research Foundation 1987):

- incinerator emissions
- fugitive emissions from organic unloading/storage and physical/chemical treatment
- evaporator emissions
- incinerator upsets or spills of materials on-site
- fumes from landfill equipment and trucks on-site

As one of the impacts associated with the facility, odours have the potential to disrupt the daily activities and use and enjoyment of property for nearby residents and the operations of nearby community and recreation features. Odours can be mildly annoying; they can be unpleasant enough to reduce one's enjoyment of activities or require one to move indoors and/or close windows and doors. At the extreme, an odour can cause nausea and other health problems.

Approach

The assessment of odour as a nuisance impact was undertaken by reviewing information provided by ORF (Ontario Research Foundation 1987), and information available regarding experiences at other waste management facilities. The perceptions of residents and owners/operators of community and recreation features regarding odour and its implications for their household/ facility have been considered.

Assumptions

The following assumptions were used in the analysis of odour impacts:

- the incinerator/plant will operate 24 hours a day, 7 days a week for the life of the facility (at least 20 years);
- the handling of materials on-site will occur at any time and hence spills could occur at any time;
- equipment and trucks on-site will generally operate between 7:00 am and 4:30 pm.

The following analysis includes an assessment of the construction and operational phases of the project.

Analysis

No odour impact zone has been delineated around the site. Studies by ORF conclude that any odours produced on-site will be confined largely to the site, but occasionally odours may be detected beyond site boundaries under the most adverse conditions. (Ontario Research Foundation 1987). These conditions would include the handling or treatment of high concentrations of odourous compounds, or unfavourable dispersal conditions.

Community and Recreation Features

Without more specific information, it is difficult to determine with certainty whether community and recreation features could be affected by odours. The facilities nearest the site include Bethel Community Church, the Silverdale Gun Club, Niagara Regional Sportsmen's Gun Club and a proposed trailer park/campground (see Figure 6.3). Further away are the Gainsborough Central Elementary School and West Lincoln Co-op Nursery. While concerns regarding odour were not specifically expressed by representatives of these agencies, a number did note concerns about toxic spills and their health implications.

Depending upon the nature and severity of any odours that are produced, Gainsborough Central Elementary School, West Lincoln Co-op Nursery School and the proposed trailer park/campground are likely to be most sensitive to odours, the first two because of the children, the latter due to the nature of its use (camping). The Niagara Regional Sportsmen's Gun Club and Silverdale Gun Club may find that any odours that occur detract from their outdoor activities; this could have repercussions on the demand for these features should users choose to go elsewhere.

The use of the other features in the local community could be disrupted if odours occur; however, because most are further away from the site, the odours would likely be diminished and hence the effects limited.

Experiences at Other Facilities

In the investigation of existing waste management facilities it was found that two of the four facilities visited had experienced off-site odour problems. At the Tricil facility near Sarnia, complaints about odours were noted and identified as one of the most serious problems associated with the facility. Residents associate odours with the plume emitted from the incinerator stack under certain weather conditions. Occasionally the landfill is the source of odour. The odours have affected residents' enjoyment of outdoor activities, particularly during the summer.

Approximately 10 years ago odour from the Tricil facility was noticeable 5 to 8 km (three to five miles) away; the installation of a taller stack (70 metres high) and better equipment 2 years ago have reduced the problem to occasional occurrences. Residents up to 1.5 km from the site reported occasional odours; some living up to 4 km away reported occasional smells (approximately once a month), depending upon the prevailing winds.

At the Rollins Environmental facility in Baton Rouge, Louisiana, numerous complaints were noted with regard to odours causing nausea and respiratory problems. Both nearby residents and residents of the Town of Baker, 8 to 10 km (5 to 6 miles) away, have been affected, as has as a community centre approximately 0.8 km from the facility. Many of the odour problems were associated with landfarming activities on-site; since these have ceased, the odour problem has lessened. New management at the plant is also credited for improving the situation. The odour problems are still numerous however, and odours were part of the basis for a recent successful class action suit launched by residents against the company.

No odour problems were reported at the Stablex facility in Blainville, Quebec nor at the Rollins Environmental facility in Deer Park, Texas. However, the Rollins Facility is located in a major industrial area; it would be difficult to distinguish between any odours emanating from it and the other industries.

Public Perceptions and Concerns

Few comments were received from local residents with respect to anticipated odour impacts from the proposed facility. Other nuisance impacts and the risks residents associated with the facility were of greater concern. As well, farming activities in the area produces strong odours; 17% (37 of 214) of the survey respondents noted that odours are currently a problem in the area.[1] Although residents have not expressed a concern about potential odour impacts, they anticipate that some odours will be produced. When asked if they thought that odours from the facility would affect their household, 59% of the survey respondents (138 of 234 respondents) felt they would.[2] Fifteen percent (34 of 234 respondents) believed they would not be affected, and the remainder (26%, 62 respondents) were not sure. The most often noted changes that residents anticipated to their household activities as a result of odour included closing windows and/or doors, reducing outdoor activities, and remaining indoors.

Indirectly related to the concern regarding odour is the importance placed by residents on clean air. When asked to identify the most important characteristics they liked about the area, clean air was the fourth most frequently mentioned attribute reported by survey respondents. In an open-ended question, 25% of those interviewed (57 of 235 respondents) identified clean air as one of the area's important attributes;[3] 90% (218 out 242) cited it as a characteristic they liked most about the area from a list provided during the interview.[4]

Evaluation Without Mitigation

It is difficult to judge the level and significance of possible odour impacts. Their occurrence and the possible magnitude of impact is uncertain; it is anticipated that it will vary depending upon the type and amount of materials involved and weather conditions (for example, wind speed and direction). At two existing facilities visited by IER staff, odours have been a serious problem; however, no problems were noted at two other facilities. Improved equipment and better management techniques have diminished the frequency of odour problems at existing facilities.

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[1] Question 60.

[2] Question 85b.

[3] Question 58.

[4] Question 59.

The distance from the site within which odour could be an occasional problem cannot be precisely determined. At the Rollins (Baton Rouge, Louisiana) and Tricil (Sarnia) facilities odour has, in the past, been experienced 8 to 10 km (5 to 6 miles) from the sites; more recently odour has been confined primarily within 1.5 km of the Tricil facility.

As a result of their negative perceptions of the facility, and their concerns for health risks, toxic spills, and effects on air quality, residents are likely to be concerned about any odour problems. Odour provides tangible evidence of emissions from the facility. The frequency, intensity, unpleasantness and effects of odours could cause concern about effects on health, agricultural produce and the environment.

Depending on the frequency and magnitude of odour problems, residents' use and enjoyment of property could be affected. Impacts would be the greatest during the summer time when windows and doors are likely to be open and residents are outdoors more often. The effects could range from being noticeable and annoying, to very unpleasant, or result in health effects such as nausea. Enjoyment of activities could be diminished, and residents may find it necessary to curtail or limit outdoor activities. Such changes could be significant for those who place importance on the outdoor activities.

It appears from both ORF's analysis and experiences elsewhere that with the best equipment and good management techniques, odour problems should be a rare rather than a constant concern.

The potential for odours generated from trucks and on-site equipment would be more constant than that from spills and incinerator emissions; the former sources would be the only source of odours during the construction phase, while the latter are anticipated only under accident or upset conditions. Whether fumes are noticeable will depend, in part, on the location of trucks and equipment on-site relative to residential properties and community and recreation features. Odours from vehicles are likely to be restricted to the nearest properties under normal conditions.

Impact Management Strategy

Perhaps the most effective and appropriate measure to address odour impacts is prevention; once an odour is produced, it is difficult to mitigate and/or contain on-site. Attempts at other waste management facilities to mitigate odours have had limited success. At the Rollins facility in Baton Rouge, air conditioners were installed in a nearby community centre to allow windows and doors to be closed during the warmer months. However, this proved ineffective since the odours from outside were drawn into the building. At both the Rollins (Baton Rouge) and Tricil facilities, better equipment and on-site management practices lessened the odour problem substantially. Good management practices, such as careful handling of material and precautions to prevent spills and upsets can substantially reduce the chance of odours being created. Recommended measures include the following:

- training and regular retraining of employees regarding the proper handling of materials and operation of equipment;
- regular checks of equipment to ensure it is in proper working order;
- enclosure of areas where materials are handled.

Truck and equipment should be prohibited from long-term idling near the site boundary to lessen the potential for odours caused by fumes. In the case of fugitive volatile emissions, appropriate ducting and incineration or scrubbing of vapours (where practical) may help alleviate odour impacts (Ontario Research Foundation 1987). Further, ORF has suggested blending of wastes to dilute compounds of concern; limiting the inventory of odorous compounds at any given time; and the scheduling and handling of these compounds under favourable atmospheric disperson conditions.

At the Tricil facility, odour complaints to the MOE are reported to have limited effectiveness, as odours are often gone by the time MOE inspectors reach the site. OWMC will establish a complaints bureau to receive odour complaints from the public (Ontario Waste Management Corporation 1988).

Monitoring of odours will be undertaken periodically using a combination of analytical and sensory techniques to determine the frequency and extent of their occurrence. If a problem is identified, measures should be implemented to eliminate or alleviate the odours (Ontario Research Foundation 1987). However, such monitoring is technically difficult. Thus, more emphasis might be placed on response to complaints, rather than monitoring.

Evaluation With Impact Management Strategy

Again, the frequency and magnitude of odour impacts will determine the degree of disruption of day-to-day activities experienced by residents. Occasionally, residences beyond the site boundaries could experience odours from the facility. Impact would be greatest when windows and doors are likely to be open and residents spend more time outside. The enjoyment of outdoor activities could be reduced, and time spent in these pursuits could diminish as a result. These types of impacts would be significant for those who value outdoor activities.

9.5.6 CUMULATIVE IMPACTS

A number of residents and households will be affected by most, if not all, of the anticipated nuisance impacts; others will experience little or no effect. At any given location, the individual impacts could range from low to high in significance. The effects of the nuisance impacts will be cumulative. Disruption of daily activities and the use and enjoyment of property will be greater when households experience more than one nuisance.

Each residence affected by more than one nuisance impact is considered as experiencing cumulative impacts. Table 9.13 identifies the cumulative impacts anticipated at each residence location. A total of 66 households are expected to experience cumulative impacts. Noise, dust, visual and lighting impacts are considered, as it was possible to identify the residences that would be affected. However, some of them may also occasionally be affected by odour.

The cumulative impacts will result in a change in the character of the area and will serve as a reminder of the incongruent nature of the facility in contrast to the rural-agricultural character of the area. Valued attributes such as peace and quiet and the country atmosphere will be affected, disrupting residents' enjoyment of property. For those most directly affected, daily activities will be interrupted. These changes

TABLE 9.13
CUMULATIVE IMPACTS

RESIDENCE LOCATION NUMBER	NOISE IMPACT[1]	VISUAL IMPACT[2]	LIGHTING IMPACT	DUST IMPACT
1	-	◊	◊	-
3	-	◊	◊	-
4	-	◊	◊	-
6	◊	-	◊	-
9	-	◊	◊	-
10	-	◊	◊	-
11	-	◊	◊	-
12	◊	◊	◊	-
13	◊	◊	◊	-
14	◊	◊	◊	◊
15	◊	◊	◊	◊
16	◊	◊	◊	◊
17	◊	◊	◊	◊
18*	◊	◊	◊	◊
19*	◊	◊	◊	◊
20*	◊	◊	◊	◊
21*	◊	◊	◊	◊
26	◊	-	◊	-
27	◊	-	◊	-
29	◊	-	◊	-
30	◊	◊	◊	-
33*	◊	◊	◊	◊
34	◊	-	◊	◊
35	◊	◊	◊	-
36	-	◊	◊	-
37	-	◊	◊	-
39	-	◊	◊	-
40	-	◊	◊	-
41	-	◊	◊	-
42	-	◊	◊	-
43	-	◊	◊	-
44	-	◊	◊	-
45	-	◊	◊	-
46	-	◊	◊	-
47	-	◊	◊	-

TABLE 9.13 CUMULATIVE IMPACTS, CONTINUED

RESIDENCE LOCATION NUMBER	NOISE IMPACT[1]	VISUAL IMPACT[2]	LIGHTING IMPACT	DUST IMPACT
48*	◊	◊	◊	◊
49*	◊	◊	◊	◊
50*	◊	◊	◊	◊
51*	◊	-	◊	◊
52*	◊	◊	◊	-
53	◊	-	◊	-
55	-	◊	◊	-
56	◊	-	◊	-
57*	◊	◊	◊	-
58	◊	◊	◊	-
59	◊	◊	◊	-
60	-	◊	◊	-
62	-	◊	◊	-
63	-	◊	◊	-
64	-	◊	◊	-
65	-	◊	◊	-
66	-	◊	◊	-
67	-	◊	◊	-
68	-	◊	◊	-
71	-	◊	◊	-
72	-	◊	◊	-
73	-	◊	◊	-
75*	◊	◊	◊	◊
90	◊	-	◊	-
96	-	◊	◊	-
97	-	◊	◊	-
98	-	◊	◊	-
99	-	◊	◊	-
100	-	◊	◊	-
101	-	◊	◊	-
102	-	◊	◊	-

* DENOTES RESIDENCE ELIGIBLE FOR 'BUY-OUT POLICY': Refer to OWMC. Background Material for OWMC Phase 4B Public Consultation Site Assessment Meetings. June 1987, for the criteria on which eligibility for 'Buy-Out Policy' was determined.

Notes:

1. Based on landfill noise increase over ambient levels at outdoor living area, 150,000 tonnes/annum typical operation.
2. Includes residences affected only by high and moderate visual impacts.

could have implications for how residents view their community, the acceptability of the facility and consequently the special impacts (e.g., satisfaction with community, community stability). The manner in which OWMC addresses cumulative impacts will have implications both for the acceptability of the nuisance impacts and the facility as a whole.

OWMC recognizes that even with the implementation of impact management measures there will be cumulative impacts. OWMC is committed to a range of additional impact management measures other than those directly aimed at individual nuisance impacts. These measures include[1] (Ontario Waste Management Corporation 1988):

- the establishment of a Property Value Protection Program;
- monitoring of property values and modification of the property value protection zone boundary, if indicated by OWMC's monitoring results (to include properties outside the present property value protection zone);
- establishment of a Financial Security and Claims Resolution Policy and a Special Case Policy to respond to resident/community concerns with respect to mitigation/compensation/liability during site operations and following closure;
- establishment of a complaints bureau for nuisance impacts;
- undertaking pre-operational monitoring to establish baseline conditions;
- monitoring nuisance impacts to ensure that the impacts are occurring as predicted and that the mitigation measures are functioning as expected;
- adjusting the direct impact zone, if required, on the basis of the monitoring results;
- establishing a comprehensive, multidisciplinary monitoring program, with monitoring to extend over site life and post-closure phases;
- establishing a Community Monitoring Committee with third party involvement;

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[1] The impact management measures listed here are those which apply to the direct impact zone only, and are subject to Cabinet approval. OWMC has also committed to a series of other measures which apply to the broader community.

- providing the opportunity for periodic public review of the monitoring program and data;
- maintainance of all OWMC lands, other than the site, in existing land use, and encouragement of farming activities on those lands presently in agriculture if leased or sold;
- development of mechanisms for effective dialogue between farm operators and OWMC to place perceptions of nuisance impacts in perspective.

Further details on the OWMC Property Value Protection Program, the Community Monitoring Committee, the Financial Security and Claims Resolution Policy and the Special Case Policy are provided elsewhere (Ontario Waste Management Corporation 1987 and 1988).

At least twelve residences (48 residents)[1] are expected to experience unacceptable levels of cumulative impacts even after all reasonable mitigation measures have been applied. OWMC has established a 'Buy-out Policy' for these properties as part of the Property Value Protection Program (Ontario Waste Management Corporation 1987). OWMC has met with eligible homeowners individually to discuss the ways in which their properties could be affected by the facility and possible mitigation measures; an offer to purchase these properties will be made. OWMC will also provide assistance to each household with respect to relocation costs (Ontario Waste Management Corporation 1987). The residences eligible for the 'Buy-out Policy' are indicated with an asterisk in Table 9.13. Eligibility for this policy was based on the degree of impact anticipated, as well as the actual number of impacts expected.[2]

A number of other properties experiencing cumulative impacts are also eligible for the 'Guaranteed Purchase Policy' under the Property Value Protection Program. Under this policy, the property owner would initiate the sale of the property and attempt to sell on the open market. If unable to get fair market value, OWMC would purchase it at the fair market price.

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[1] Residence number 32 has not been included in this figure as it is vacant.

[2] For details on the criteria on which eligiblity for 'Buy-Out Policy' was determined, refer to Ontario Waste Management Corporation. Background Material for OWMC Phase 4B Public Consultation Site Assessment Meetings. June 1987.

9.6 ACCESS ROAD IMPACTS

9.6.1 INTRODUCTION

The assessment of the potential standard social impacts associated with the transport of special waste to the OWMC facility encompasses: 1) the disruption of day-to-day activities and/or the use and enjoyment of their properties that residents living near the access route may experience; and 2) the disruption of the operations of community and recreation features along the access route.[1] These disruptions could result from changes in traffic levels (congestion), reduced access to the roadway or private property, increased levels of noise, dust, vibration, and odour, as well as nuisance resulting from evacuation in the event of a spill.[2]

Typically, access road nuisance impacts (noise, dust, vibration and odour) are more noticeable outdoors. Residents having certain characteristics are more sensitive to these types of impacts; these groups include those spending most of their time at home or on their property (i.e., homemakers, pre-schoolers, retired persons, farmers).

Descriptions of the route itself and the current conditions along the roadway are given in Chapter 6. The discussion in that chapter provides an estimate of the population and characteristics of the households along the access route, their use of the roadway and current concerns, as well as a description of the community and recreation features in the vicinity, and the concerns that their representatives have expressed regarding existing roadway conditions.

There are 340 households (1108 residents) located within 0 to 150 m of the access road, and a further 250 households (803 residents) located between 150 and 500 m from the road.[3] Fifteen existing and two other (1 proposed and 1 under construction)

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1. The analysis is based on a 'Year 5' level of plant operations of 150,000 tonnes/annum.
2. Property value impacts will not be a part of this analysis; the reader is referred to Morehouse Economic Planning Consultants, Site Assessment, Phase 4B: Economic Impact. 1987.
3. The rationale for the access route study areas is provided in Chapter 5, Section 5.3.

community and recreation features are found within 0 to 150 m of the access road; another 5 are located within 150 to 500 m. Table 6.19 (Chapter 6: Existing Conditions) lists these features.

A number of these facilities can be considered as potentially sensitive to impacts resulting from truck traffic. This sensitivity can be related to the age of users (i.e., pre-schoolers, seniors), hours of service (i.e., same hours as trucks will be on road), or the nature of the service they offer (i.e., the quiet atmosphere of campgrounds, schools, churches and libraries; crossing of the road to use riding trails; the 'natural' quality of the environment). Features assessed as being potentially sensitive include Balls Falls Conservation Area, Vineland Public School, the Indian Lake Campground, Rittenhouse Branch - Lincoln Public Library, Lincoln Lodge, Damastra Farms, Vineland Co-op Nursery (located in Vineland Women's Institute Hall), the United Mennonite Home for the Aged, the proposed trailer park, and Heritage Village (under construction). A number of churches were not considered to be sensitive as they are used largely on weekends and evenings, when OWMC trucks will not be on the access road.

Approximately 40 farm headquarters are located along the access route (Ecologistics Ltd. 1988). A number of farmers use the access road, particularly Schram Road , for the movement of agricultural vehicles.

9.6.2 ACCESS ROUTE TRAFFIC AND ACCESSIBILITY IMPACTS

Additional vehicular traffic will occur on the access route during both construction and operation of the OWMC facility.

Construction

The construction of the OWMC facility will take approximately 18 months, with the peak period occurring over approximately six months between months 10 and 16 (Monenco Ltd. 1988). Peak traffic activity will occur in December 1990. During this period of peak activity, it has been estimated that 488 trucks will enter and leave the site each day for a total of 976 OWMC-related two-way truck movements (M.M. Dillon Ltd. 1987). Employee vehicles will account for 493 one-way movements (986 two-way). Impacts will be somewhat less during the non-peak months of construction. Construction vehicles (both trucks and employee vehicles) will not be confined to the access route designated for use during site operation. Adjustments in signal timings at the intersection of Regional Road 24 and Highway 20 should mitigate anticipated impacts on the level of service at this intersection that might result from facility construction (M.M. Dillon Ltd. 1987).

Operation

A total of 231 residences (778 residents) are located adjacent to the access route; an additional 359 residences (1133 residents) are located within 500 metres of it.[1] Thus, a total of 590 residences (1911 residents) are located within 0 to 500 metres of the access route. There are 15 existing and 2 other (1 proposed and 1 under construction) community and recreation features within 0-150 m of the access route, and another 5 are located within 150 to 500 m.

The operation of the OWMC facility will result in 168 two-way truck movements[2] and 364 two-way employee vehicle movements each day.[3] The increase in total daily traffic along Regional Road 24 will range from 0.5% in the Vineland area to 2.2% in the vicinity of the Highway 20 intersection. The increase in truck traffic at these two locations will be 2.5% and 10%, respectively. OWMC-generated traffic will represent a 10.2% increase in total traffic and a 29% increase in truck traffic along Highway 20 (Ontario Waste Management Corporation 1987).

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[1] The access route study areas (0-150m and 150-500m) were based on the access route impact zones developed by the risk consultant (Environ Corp.). There are two levels of accessibility to be considered: access to private property, and access to sideroads that intersect with the access route. It is assumed that residents or community and recreation features adjacent to the roadway would potentially be impacted in terms of access to private property; all of the residents or features within 500 metres are assumed to regularly use the cross roads and therefore may potentially experience impact in this regard. Some of these more distant residents/ features may also have direct access to the road. It is recognized that the access route study areas are somewhat limited in their usefulness for assessing the social impacts associated with the transportation of hazardous waste.

[2] These would include 80 special waste trucks, 10 additives and reagents trucks, and 78 granular materials truck movements. It should be noted that a small number of special waste trucks will be using other roads: approximately 4 trucks will approach the OWMC facility from the east using Highway 406 or the QEW and Highway 20 (one-way movements); approximately 6 trucks will approach the OWMC facility using Highway 3 and Regional Road 24; and approximately 1 truck every four days will approach the OWMC facility from the west using Highway 20 (Ontario Waste Management Corporation. Background Material for the Ontario Waste Management Corporation Phase 4B Public Consultation Site Assessment Meetings. 1987).

[3] Employee traffic will not be restricted to the designated access route.

If Schram Road is selected as the preferred entry point to the site, OWMC operations would increase existing traffic levels by 332%. Thirty-two percent of this increase will be attributable to trucks, the remainder to other vehicles. An increase in turning movements will occur at the intersection of Schram Road and Highway 20; impacts at this location will be compounded by a 57m jog between Schram and Silverdale Roads. Four site entrances will be built from Schram Road (an employee entrance, a plant entrance and two landfill entrances), and an emergency service access from Highway 20 will also be constructed (Ontario Waste Management Corporation 1988).

At landfills in New Jersey and New York States, truck traffic was blamed for a reduction in access to properties, interference with bicycle and pedestrian traffic, and increased traffic congestion on local roads (Edelstein, undated).

The perceptions and concerns of the public as they relate to traffic along the access route were revealed through the public consultation process[1] and the Phase 4B resident surveys.[2] Reduced accessibility to property was mentioned during the public consultation; there was also concern about interference with school buses and farm machinery. Residents feel that they will have to alter their transportation patterns to avoid accidents and heavy traffic. Vineland Missionary Church was concerned that if an OWMC truck should break down on the Victoria St (Regional Road 24) hill and be left over the weekend, it would interfere with Sunday services. Damastra Farms (an equestrian centre) felt that increased truck traffic would make access more difficult for both vehicles and riders wishing to cross the road. Amber Lodge (a group home for psychiatric patients) anticipated interference with the walking activities of residents.[3] The United Mennonite Home for the Aged was concerned about reduced accessibility for ambulances.

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1. This included Kitchen Table Meetings, One-on-One Meetings, Community Leader and Agency Contacts, and OWMC Regional Meetings, Drop-in Centres and Open Houses.
2. These include the addendum to the Phase 4B Resident Interview (carried out over the study area) and the Phase 4B Access Route Drop-off Survey.
3. This facility is located more than 500 m from the access road.

Current traffic along the access route is a concern for local residents, and OWMC traffic is generally expected to worsen the situation. This finding is supported by various interview/survey findings reported below.[1]

The results of the Phase 4B Resident Interviews indicated that most concerns with access route traffic were risk-related (i.e., related to fears of damage to health or environment). General transportation concerns were mentioned by 19% of all respondents.[2] A number of residents (16%) feel there is a current problem with traffic.[3] Sixty-two percent of respondents felt that truck traffic from OWMC would disrupt their household. [4] A quarter of these respondents would avoid using the access road; 16% felt that travel times would increase due to congestion.

An addendum to the Phase 4B resident interviews was administered to non-farm residents along the access route within the study area. Half of these households (7) felt there were problems with current traffic levels, and two-thirds of these felt traffic speed was a current problem; 17% perceived a risk presently associated with exiting their driveway.[5] One third complained of interference with school buses, while 17% did the same for interference with farm machinery. Almost all respondents (13 of 14) felt these problems would be compounded as a result of the OWMC facility. Thirty-eight percent felt that they would experience more difficulty accessing their properties; 31% expected interference with farm machinery or mail service; and 23% anticipated interference with school buses.

Results of the access route drop-off survey indicated that residents consider current accessibility to property to be a 'very important' or 'important' concern (85% of respondents), as is interference with the movement of school buses (87%), cyclists (89%) and farm machinery (50%). When future OWMC truck traffic was considered, the level of concern increased to 90% for interference with buses and 62% for conflict with farm machinery.

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1. All references to survey question numbers in this section pertain to the Phase 4B Resident Interviews, unless otherwise noted.
2. Question 51.
3. Question 60.
4. Question 85e.
5. Question 2, Addendum 1.

A number of residents use the roadway area for walking, bicycling and jogging. Many felt these activities would be negatively affected by OWMC traffic. Seventy-two percent (13 respondents) of those answering the business survey addendum felt OWMC-related traffic would affect their business. Driveway access was considered a potential problem by 1 respondent.

The change resulting from OWMC in both daily and peak hour traffic volume will be so small as to have no measurable effect on intersection or roadway levels of service along Regional Road 24 (Ontario Waste Management Corporation 1987).[1] Impacts at the intersection of Highway 20, Schram Road, and Silverdale Road will be significant; mitigation will be required to eliminate an unsafe, and therefore unacceptable, road design. The impact on Schram Road itself is significant, in terms of both the physical capability to handle the heavy traffic and access to the site. There will be a high degree of disruption for farmers using Schram Road; impact will be low to moderate for other farmers depending on the frequency of access road use (Ontario Waste Management Corporation 1987). The potential for increased interference with customer and service vehicles accessing farms adjacent to the access road will be minimal.[2]

No specific mitigation measures will be required for the portions of the access route on Regional Road 24 and Highway 20. The existing 57m jog at the intersections of Highway 20, Schram Road and Silverdale Road will be eliminated. A left turn storage lane on Highway 20 and a right turn channelized land to Highway 20 will be constructed. Schram Road will be reconstructed to handle the anticipated heavy traffic (Ontario Waste Management Corporation 1988).

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1. Level of service is a qualitative measure of the effect of a number of factors which include speed and travel time, traffic interruptions, freedom to manouever safely, driving comfort, convenience and operating costs.
2. A discussion of potential impacts on agricultural operations is included in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture, 1988.

Four site entrances will be constructed from Schram Road; three of these will be designed to accommodate truck movements and the fourth to handle employee/visitor vehicles (Ontario Waste Management Corporation 1988). An emergency entrance from Highway 20 will be constructed to meet King's highway entrance design standards. OWMC will assist in driver training with specific reference to OWMC-destined trucks. Potential interference with local traffic and farm machinery movements will be reduced by staggering shifts and scheduling off-site transport of excavated materials in order to avoid peak traffic hours (Ontario Waste Management Corporation 1988).

OWMC will implement the following monitoring and contingency measures, if required (Ontario Waste Management Corporation 1988):

- develop a program to monitor waste truck movements to ensure the designated access route is used;
- monitor vehicle activities along the access road to identify the conflicts between farm equipment, other vehicles and OWMC-related traffic;
- monitor complaints along the access route;
- establish a public information program;
- formulate an approved list of haulers;
- formulate contracts with generators to specify use of designated access route;
- follow-up with generator/transport company required to correct all violations detected by OWMC;
- work with municipalities to restrict truck movements to the access route;
- establish a complaints bureau to deal expeditiously with public concerns of risks or impacts associated with the OWMC facility, including concerns related to the access route;
- enter into agreements and provide funding for the establishment of a local monitoring committee to provide an opportunity for the community to review monitoring data.

It is assumed that the impact management measures described above will reduce residual traffic impacts to acceptable levels for both residents and community and recreation features along the access route; if they do not, the monitoring and complaints mechanisms should identify any problems and steps should be taken to respond appropriately.

9.6.3 ACCESS ROUTE NOISE IMPACT

An increase in truck traffic related to OWMC could result in a rise in the noise levels along the access routes.[1] A number of factors influence road-related noise impacts (Weiss 1984):

- traffic density;
- proportion of heavy trucks in the traffic;
- speed of traffic;
- amount of stop and go traffic;
- road gradients and slope;
- road width; and
- type of road surface.

A noise impact zone, consisting of the area within the predicted 55 dBA traffic noise contour, has been identified.[2] However, many of the residences located within this contour are currently experiencing noise levels over 55 dBA, and as such would not experience impacts in terms of this criteria. It has been estimated that there are 986 residents and 17 community and recreation features within this zone. Seven of these features are potentially sensitive to noise impacts.[3]

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1. For more detail see S.S. Wilson and Associates. Site Assessment, Phase 4B: Noise, 1987. Prepared for the Ontario Waste Management Corporation.
2. Mitigation measures must be considered at new residential developments if day-time road traffic noise will exceed 55 dBA, hence the choice of a 55 dBA contour.
3. Sensitivity of community and recreation features was assessed based on the characteristics of their users, their hours of operation, or the nature of the service offered.

Because of existing high levels of traffic along the access route, the predicted increase in sound levels will be less than 1 dBA (and thus imperceptible) along the entire route, with the exception of Schram Road between Highway 20 and the site entrance (S.S. Wilson and Associates 1987). The increase in noise levels resulting from OWMC-related truck traffic on this section of Schram Road will be approximately 14 dBA; however, no residences are located along this road section.

Experiences at other waste management facilities do not provide much insight into possible noise impact along the access route. Resident concerns and actual impacts relate more to risk and safety issues. However, local residents in New York and New Jersey considered the constant background sound of trucks and noise from trucks lining up in the morning while waiting for landfills to open to be the worst nuisance impact (Edelstein 1983, 11-20; Edelstein undated).

The concerns of residents regarding access route noise became evident during the public consultation process[1] and from the results of the Phase 4B Resident Surveys.[2] During public consultation, concern about noise levels was the nuisance impact most commonly mentioned by residents. The representative from Vineland Public School felt that students would be disturbed by each passing truck, with possible effects on study productivity. The contact from the Rittenhouse Library felt that OWMC-related traffic would impact the quiet environment of this facility. The Pastor from Vineland Pentecostal Church expressed the concern that OWMC trucks would make the existing noise problems worse. The Victoria Tennis Club and the United Mennonite Home for the Aged were also concerned about access route noise impacts.

The interviews with local community residents revealed that 62% of the respondents felt that truck traffic along the access road would affect their households,[3] although most did not relate this directly to noise impacts (many residents use the access route even if they don't live along it). An addendum to the Phase 4B Resident Interviews was administered to non-farm residents residing along the access route within the study area. Seven respondents believe that there are current traffic problems[1]; of these, two feel that noise is a problem.[2] Thirteen households felt that OWMC truck traffic would result in access route impacts, but only 8% (1 household) mentioned noise specifically.[3] Respondents to the access route drop-off survey concentrated on the safety and risk of activities such as walking, riding or waiting for buses along the access route. Ninety-two percent of respondents felt that current noise levels were a very important or important concern.[4] If the addition of OWMC trucks was considered, respondents felt that noise impacts from OWMC would affect their use of the road for walking, riding and waiting for the school bus (4% to 20%, depending on the activity).[5]

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[1] This included Kitchen Table Meetings, One-on-One Meetings, Community Leader and Agency Contacts, and OWMC Regional Meetings, Drop-in Centres and Open Houses.

[2] These include the addendum to the Phase 4B Resident Interviews carried out over the study area, and the Phase 4B Access Route Drop-off Survey.

[3] Question 84.

The Ministry of the Environment has indicated that they will assess noise impacts from road traffic on access routes on the following basis (S.S. Wilson and Associates 1987):

- If the addition of OWMC traffic increases noise levels at receptors along access roads by 3.0 dBA or less, it will not be considered to constitute a problem;
- If the addition of OWMC traffic increases noise levels at receptors along the access roads by more than 3.0 dBA, mitigation should be examined.

The analysis shows that noise increases along Regional Road 24 and Highway 20 attributable to OWMC trucks would be approximately 1 dBA. This level is deemed to be imperceptible. Noise levels will rise by 14 dBA along Schram Road. Two residences located on the south side of Highway 20 near Silverdale Road will be impacted by access route noise at the intersection to a marginal or low degree (i.e., less than a 5 dBA increase).[6] Because there will be few noise impacts from OWMC trucks for residents or community and recreation features along the access routes, no mitigation measures have been suggested. However, OWMC will establish a complaints bureau and monitor noise along the access route if required (Ontario Waste Management Corporation 1988). It has also been suggested that noise due to truck traffic in and out of the site access road could be monitored on-site as a source of environmental noise which could affect nearby points of reception. In terms of off-site monitoring of noise from OWMC truck traffic, traffic counts are an appropriate option (S.S. Wilson and Associates 1987).

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[1] Question 1, Addendum 1.

[2] Question 2, Addendum 1.

[3] Question 3, Addendum 1.

[4] Question 1, Phase 4B Access Route Drop-off Survey.

[5] Question 3, Phase 4B Access Route Drop-off Survey.

[6] Residence location numbers 33 and 75 (see Figure 9.1); Residence number 32 (vacant) would also experience a low degree of impact (less than 4 dBA) (S.S. Wilson and Asociates 1987).

While access route noise impacts were identified by residents as a concern, and perceived as a nuisance in relation to the enjoyment of both indoor and outdoor activities, the analysis shows that the actual impact of OWMC truck traffic will be insignificant. The monitoring program and complaints mechanism will serve to indicate if the situation is otherwise.

9.6.4 ACCESS ROUTE DUST IMPACTS

The increased truck traffic related to the construction and operation of the OWMC facility could result in dust impacts along the access route (Ontario Research Foundation 1987). These impacts will result from the suspension of dust from the paved road surface. Impacts may also occur periodically as vehicles hit the shoulder; however, such impacts are not anticipated to extend far beyond the immediate area near the road.

In a review of community annoyance with disruptive facilities, dust and dirt impacts were mentioned second only to noise as the greatest outdoor nuisance associated with access roads (Weiss 1984).

During the public consultation process, concerns about dust impacts were raised by the United Mennonite Home for the Aged, Bismarck United Church, Rittenhouse Branch Library and the Balls Falls Conservation Area.[1] Although 62% of the respondents in the Phase 4B interviews of study area residents indicated that truck traffic along the access route would disrupt their households, they did not relate this specifically to dust impacts.[2] A number reported that they would close their windows or doors (3%), reduce outdoor activities (2%), remain indoors (1%) or put up with it (1%). In an addendum to the interview that was administered to residents along the access route within the study area, dust impacts were not mentioned as either current or future (OWMC-related) concerns.

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[1] This included Kitchen Table Meetings, One-on-One Meetings, Community Leader and Agency Contacts, and OWMC Regional Meetings, Drop-in Centres and Open Houses.

[2] Question 85e.

Seventy-eight percent (78%) of the respondents to the access route drop-off survey felt that current dust impacts along the access route were a 'very important' or 'important' concern.[1] Eighty-two percent (82%) rated dust impact as such if future OWMC traffic was taken into consideration.[2] A number of respondents (7% to 21%, varying with specific activity) indicated that air suction from trucks would interfere with their roadside activities, including walking, riding, and waiting for the school bus.[3] This air suction could directly affect dust impacts.

Dust and exhaust emissions along the access road can be expected to increase somewhat once the facility is operational (Ontario Research Foundation 1987). OWMC will establish a complaints bureau, if required (Ontario Waste Management Corporation 1988). Residents could report dust problems to the bureau.

9.6.5 ACCESS ROUTE VIBRATION IMPACTS

The noise consultant has concluded that because of the relatively low increase in truck traffic resulting from OWMC activity, no increase in vibration impacts over existing levels is expected (S.S. Wilson and Associates 1987).[4] Vibration impacts associated with waste-laden trucks were indicated in the literature and are a concern of local residents. During the public consultation program,[5] residents and representatives from community and recreation features indicated that there are current problems related to vibration from truck traffic; these include damage to building foundations, water mains and the road. Almost 80% of the respondents to the Phase 4B Access Route Survey felt that structural damage due to truck vibration was a 'very important' or 'important' existing concern;[1] 86% felt that the additional OWMC-related truck traffic would make this concern a 'very important' or 'important' consideration in the future.[2]

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[1] Question 1, Phase 4B Access Route Drop-off Survey.

[2] Question 2, Phase 4B Access Route Drop-off Survey.

[3] Question 3, Phase 4B Access Route Drop-off Survey.

[4] Vibration impacts may result from either ground borne vibration or sound waves; neither of these types of vibration are expected to impact residents as a result of traffic attributable to OWMC (S.S. Wilson and Associates 1987).

[5] This included Kitchen Table Meetings, One-on-One Meetings, Community Leader and Agency Contacts, and OWMC Regional Meetings, Drop-in Centres and Open Houses.

Financial compensation for structural and road damage was suggested at least twice during public consultation. Since vibration impacts are not expected to occur, no impact management strategies have been identified. However, the establishment of a bureau to handle complaints will be useful in this regard (Ontario Waste Management Corporation 1988). As well, OWMC could encourage appropriate authorities to ensure the roads are properly maintained.

9.6.6 ACCESS ROUTE ODOUR IMPACTS

The potential for odour problems resulting from OWMC truck traffic has been examined and is considered minimal. Exhaust emissions, and thus pollutant levels, are expected to increase proportionally to the change in traffic levels (Ontario Research Foundation 1987). However, this type of impact was identified in the literature and is a stated concern of local residents. Odour from diesel-powered vehicles can be more objectionable than that from gas-powered engines (Weiss 1984). While odour from truck exhaust may not have a high intensity, irritation does linger on. Odours were a concern for some of the agencies contacted during public consultation. Damastra Farms has postponed plans to build new paddocks near Regional Road 24 because of the potential they perceive for more truck fumes. Fumes were also a concern of the Vineland Women's Insititute and Rittenhouse Branch Library representatives. Study area residents living along the access road identified 'air pollution nuisances' as a concern they had with regard to OWMC trucks (23%).[3] Residents responding to the access route drop-off survey also mentioned this concern (6%).[4] A number of these residents indicated that air quality problems would negatively affect their use of the roadway for walking, riding and waiting for the school bus (2% to 47%, depending on the type of activity).[5] If problems related to odour become evident, residents may report them to the complaints bureau.

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1. Question #1, Phase 4B Access Route Drop-off Survey.
2. Question #2, Phase 4B Access Route Drop-off Survey.
3. Question #3, Addendum 1.
4. Question #2b, Phase 4B Access Route Drop-off Survey.
5. Question #3, Phase 4B Access Route Drop-off Survey.

9.6.7 ACCESS ROUTE EVACUATION NUISANCE

It is possible that residents along the access route would have to be evacuated in the event of a spill or accident involving an OWMC truck. There are 340 residences located within 0-150m of the access route, and a further 250 within 150-500m. These residences are home to 1108 and 803 residents, respectively. It is unlikely that all, or even many, of these residents would be evacuated at any one time, but there is a potential for some of them to be evacuated in the event of a spill or accident involving an OWMC truck.[1] There are 15 existing and 2 other (1 proposed and 1 under construction) community and recreation features 0-150 m of the access route; 5 features are located within 150-500 m. Two types of social impact can be associated with evacuation: the nuisance or disruption associated with it, and the fear of ineffective evacuation and its implications. The latter is dealt with in Chapter 11.

The inconvenience and disruption of having to leave one's home is a more serious problem for seniors, farmers, or residents whose place of business is in their home. Local residents have pointed out that livestock cannot be left for any length of time without care (e.g., milking, feeding).[2] Concern about emergency response in general, and evacuation in particular, was indicated often by both residents and representatives from community and recreation features over the course of the public participation process.[3] The representative from the Vineland Women's Institute Hall felt that regular users might be displaced if the facility was used as a shelter in an emergency situation.

Sixty-two percent of the respondents in the study area interviews felt that facility traffic on the access route would affect their household, but only 2 of these households (1% of respondents) specifically mentioned that preparation of emergency procedures for evacuation was necessary.[4] Provided with a list of measures, 78% of those interviewed felt that improvement of local emergency services was an important step that OWMC could take to protect the interest of local residents.[1] A number of households (3% of those interviewed) specifically suggested preparation of emergency evacuation plans when asked an open-ended question on possible measures OWMC could take to protect the interests of local residents.[2] However, less than 1% felt that such plans were among the three most important measures OWMC could implement to protect the interests of the community.[3] Ninety-nine percent of the respondents in the access route drop-off survey felt that the adequacy of emergency response to spills was a 'very important' (92%) or 'important' (7%) future concern.[4]

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[1] The estimated frequency of a roadway spill that would have the potential to cause adverse effects on the exposed off-site population (implying the need for evacuation) has been estimated at once every 132 years at the 150,000 t/a level of operation (Environ Corp. 1988).

[2] Kitchen Table Meeting of February 4, 1987 in Pelham.

[3] This included Kitchen Table Meetings, One-on-One Meetings, Community Leader and Agency Contacts, and OWMC Regional Meetings, Drop-in Centres and Open Houses.

[4] Question 85e.

OWMC can acknowledge the nuisance impacts to residents resulting from evacuation by preparing detailed evacuation plans with input from interested individuals and agencies. Knowledge of evacuation plans prior to their actual implementation should lessen some of the concerns that evacuation could cause for residents.

With respect to emergency response, OWMC is committed to the following impact management measures (Ontario Waste Management Corporation 1988):

- assist in driver training with specific reference to OWMC-destined trucks;
- on-site vehicle inspection to detect faulty equipment; and
- compilation and exchange of vehicle accident and spill statistics with safety officials so that mitigative measures can be taken with respect to frequent adverse events by individual haulers.

OWMC will implement the following monitoring and contingency measures for emergency response/evacuation along the access road, if required (Ontario Waste Management Corporation 1988):

- monitor accident and spill data to identify trends and areas of possible road improvement;
- assist local municipalities in the formulation of, and participation in, emergency response plans;
- assist the municipality in the development of emergency response training;

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[1] Question 90g.
[2] Question 91.
[3] Question 92.
[4] Question 2, Phase 4B Access Route Drop-off Survey.

- develop and/or assist in the development of public awareness and education programs concerning emergency procedures applicable to in-transit spills of special wastes;
- provide technical advice on the nature of spilled material and recovery/clean-up procedures;
- notify downstream water users in the event of a spill;
- warn shippers demonstrating a high frequency of accident/spill events. In the event that appropriate corrective action does not occur, OWMC will consider other actions to eliminate shippers, carriers or drivers from OWMC services;
- emergency response plans will accommodate the particular concerns of farmers. For example, in the event of a spill, farmers will be given a speedy warning so that they can move livestock away from downstream areas;
- as part of an emergency response plan, a warning system will take into account the fact that farmers are usually difficult to reach during the day when they are out of the house;

It is imperative that emergency planning and preparedness measures are implemented in conjunction with facility operations, prior to the actual occurrence of an event for which they would be required.

9.6.8 SUMMARY

It would appear that most, if not all, of the standard impacts that might be associated with the access route will be insignificant, based on the studies carried out by various consultants. Although the experts predict impacts will be minimal, residents along the roadway are still very concerned, particularly since many feel current traffic levels are creating problems.[1] Residents' concerns in this regard are discussed further in Chapter 11. To respond to resident perceptions of the impacts OWMC-related traffic might have, OWMC should consider monitoring property values and real estate transactions along the access route.

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[1] See Chapter 6, 'Existing Conditions', for further discussion of access route residents.

9.7 CHANGE IN DEMAND FOR COMMUNITY AND RECREATION FEATURES

9.7.1 INTRODUCTION

The loss of local residents, both from the site itself and from the most severely impacted properties (i.e., those eligible for OWMC's 'Buy-out Policy'), may result in a change in demand for community and recreation facilities. Three households (5 residents) will be displaced from the site; 12 households (48 residents) are eligible for OWMC's 'Buy-out Policy'.

In social impact studies of other major development projects, the in-migration of workers during construction and operation has caused problems in terms of overburdening community and recreation facilities. This will not be the case with the OWMC facility, for a number of reasons. A small number of OWMC employees will live in the local area. During construction, it is expected that most of the workers will already reside in the Niagara Region or will live within commuting distance (Morehouse Economic Planning Consultants 1987). It is estimated that in the operational phase, approximately 27 OWMC facility employees will move to West Lincoln from elsewhere (Morehouse Economic Planning Consultants 1987). However, the effect this would have on the use of community and recreation features is difficult to determine, as it is not known where in West Lincoln they would move, or what characteristics these households would have.

Although many of the residents eligible for Buy-out or displaced from the site may leave West Lincoln[1], if they relocate elsewhere in Niagara Region, they may choose to maintain their ties with local facilities such as schools and churches. This would modify the impacts on community and recreation features described below, where it is assumed that all of the displaced residents will sever their links with the community. Of the interview respondents stating a destination, only 1 household said they would move outside the Niagara Region.[2]

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1. None of these residents reported that they would relocate elsewhere within West Lincoln. Source: IER, Phase 4B Resident Interviews, 1986, Question 66; IER, Phase 4B On-Site Resident Interviews, Question 60.
2. IER, Phase 4B Resident Interviews, 1986, Question 66; IER, Phase 4B On-Site Resident Interviews, Question 60.

It is possible that residents other than those displaced by the facility or those eligible for buy-out will choose to move. If so, the demand for community and recreation facilities would be further affected. A basic premise of this assessment is that the displaced residents and those eligible for buy-out represent a minimum estimate of out-migrants from local area. Any further out-migration is discussed in Chapter 10, which deals with special impacts. 'Voluntary' out-migration can be considered as a special impact as it occurs in response to perceived risks and impacts, as well as actual nuisance (e.g., noise, visual) impacts from the OWMC facility.

Information relevant to the possible effects of the OWMC facility on various community and recreation features is available from two sources: the agency contacts made during Phase 4B, and the Phase 4B Resident Interviews.

Agency Contacts

It is possible to screen local facilities in terms of potential impact by determining if the majority of their use is by local (as opposed to Regional) residents. Facilities that draw most of their users from the Region or beyond, or from Smithville, for instance, will be less likely to experience impacts as a result of the displacement of residents by the OWMC facility. Facilities with a large number of users will also be relatively unaffected by resident displacement. Table 9.14 lists these facilities.

Other facilities, due to their small size or emphasis on local users, may experience impacts as a result of resident displacement. Table 9.15 provides a list of these facilities.

Interview Results

The interview results provided information on the schools and churches attended by potentially displaced residents and those eligible for buy-out. These can be compared with current trends in membership and use for various facilities in order to provide an indication of potential impact. In some cases, the interview results did not provide specific information on the use of potentially impacted facilities (i.e., Dufferin Masonic Lodge, Gainsborough Centennial Hall, Oddfellows Temple, and Silverdale Community Centre).

TABLE 9.14
LOCAL COMMUNITY AND RECREATION FEATURES NOT LIKELY TO BE IMPACTED BY RESIDENT DISPLACEMENT/MOVEMENT RESULTING FROM "BUY-OUT"

Emmanuel United Church

Gainsborough Conservation Area

John Calvin School

Niagara Regional Sportsmen's Gun Club

Riverside Christian Reformed Church, Wellandport

Riverview Golf and Country Club

Silverdale Gun Club

Smithville District Christian High School

St. Ann's Community Church

Wellandport Branch, West Lincoln Public Library

Wellandport Christian School

Wellandport Community Centre

West Lincoln Co-Op Nursery School

TABLE 9.15
LOCAL COMMUNITY AND RECREATION FEATURES POTENTIALLY IMPACTED BY RESIDENT DISPLACEMENT/MOVEMENT RESULTING FROM "BUY-OUT"

Bethel Community Church[1]

Bismarck United Church

Boyle Brethren in Christ Church

Dufferin Masonic Lodge

Gainsborough Centennial Hall

Gainsborough Central Elementary School

Oddfellows Temple

Silverdale Community Centre

Silverdale United Church[1]

Notes:

1. These churches indicated they might close if members of their congregations left because of OWMC.

There are a total of 15 households (53 residents) that will be displaced or eligible for buy-out as a result of the OWMC facility.[1]

None of the residents on-site or eligible for buy-out are known to attend any of the four churches listed in Table 9.15. These residents attend St. Ann's Community Church or churches in Smithville and Wellandport.

None of the potentially displaced households, or those eligible for buy-out are known to have children attending Gainsborough Central Elementary School, which is located within the study area. Some of these households have children who attend schools outside of the study area. The following declines in enrolment have been estimated for by these schools: John Calvin School[2] - 1.2% (3 students); South Lincoln High School[3] - 0.4% (1 student); and Beamsville High School[4] - 0.1% (1 student). These losses, based on surveyed households only and thus representing only minimum estimate, are insignificant. If an estimate of non-surveyed residents is included, these numbers would almost double.[5]

Impacts on the other facilities listed in Table 9.15 cannot be predicted from the interview results. However, information on the membership, use and concerns expressed by their representatives can provide an indication of potential impact. As very little information was available in this regard for the Dufferin Masonic Lodge, it is not possible to determine effects on this feature, although a concern was expressed that the lodge might be affected if members moved out of the area because of OWMC.[1] The Gainsborough Centennial Hall draws users from the Township of West Lincoln, and is used 5 to 6 times a month.[2] The representative from this facility felt that if agriculture in the local area was negatively affected, it could be reflected in the use of the hall. Members of the Oddfellows Temple live within an eight mile radius of this feature.[3] The hall is rarely rented, as it has no liquor licence. As no membership figures were given, and no concerns raised by the representative, it is difficult to predict possible changes in demand. The Silverdale Community Centre is used by residents in the Silverdale area, approximately 6 to 8 times a month.[4] The representative felt that if people leave the area, the facility may be used less often. The centre is located approximately 4 km north of the site, and the potential movement of residents might affect the demand for this feature.

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[1] Of these, 3 are located on-site; 12 are considered to be 'most severely impacted', and thus eligible for OWMC's 'Buy-out Policy'. Phase 4B interview data are available for 8 households (53%); Phase 4A interview data is available for another 4 households (27%) and was used to supplement Phase 4B data in some instances. The three remaining households (20%) were not interviewed. At this point in time, property #75 (10-103) has been included in the properties eligible for the 'Buy-out Policy'. It is uncertain whether it will be expropriated for the Schram Road realignment; property #32 (10-158) has been excluded from this analysis as it is currently vacant.

[2] Present enrolment 241 students; an 8% increase in enrolment over the next six years is projected. Source: Peter Torenvliet, headmaster. March 23, 1987.

[3] Present enrolment 272 students; expect a 14% decline over the next five years. Source: Bob Crawford, Supervisor, Planning and Transportation, Lincoln County Board of Education. March 31, 1987.

[4] Present enrolment 957 students; project an 18% decline over the next five years. Source: Bob Crawford, Supervisor, Planning and Transportation, Lincoln County Board of Education. March 31, 1987.

[5] It was assumed that households surveyed in Phase 4A or not surveyed at all have the same characteristics as those surveyed in Phase 4B. A factor of 1.9 (based on the Phase 4B survey response rate for those displaced or eligible for buy-out) can be used to extrapolate Phase 4B resident interview results to the other households.

In summary, it appears that the displacement of residents by the OWMC facility and movement of those eligible for buy-out will result in few, if any, changes in demand for local community and recreation features.

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[1] Agency Contact, April 7, 1986.
[2] Agency Contact, April 8, 1986.
[3] Agency Contact, March 21, 1986
[4] Agency Contact, May 17, 1987,

9.8 COMMUNITY CHARACTER

Community character refers to the distinctive qualities of a community setting. These can be physical in nature (land uses, urban design characteristics, geographical/ environmental features), socio-cultural (population characteristics, way of life, shared values and perspectives) and economic (industrial and commercial activities). The character and image of a community involves a mix of these qualities and each community is unique.

The introduction of a hazardous waste management facility can alter the character of a community in several ways. It will directly alter the character of the community to the extent that it may be incompatible with the existing community character. Community character can be affected indirectly, if the introduction of the facility leads to changes in surrounding land uses and/or changes in population (due to out-migration or in-migration of residents). Change in land use or population can occur as a result of the actions of individuals in response to their perceptions of the facility. The implications of public perceptions for community character are addressed in Chapter 10, Special Impacts.

A change in land use (and hence, change in community character) can also occur if the facility attracts industry to the area. The implications of this and the potential direct impact of the facility (in terms of compatibility with existing community character) are discussed below.

Although one can not precisely predict the actual degree of impact which the hazardous waste facility will have on community character, it is still important to address the potential impacts and plan for them. It is particularly important to address the potential impacts to the West Lincoln area since it is the nature of the community which has attracted and retained its residents.

The present community is rural with a focus on agriculture activity. The area is also rich in Canadian history as it was one of the first settled areas in central Canada, and was an important area during the war of 1812. To a large extent, the rural and historically significant character of the community has been preserved. For example, farming has been the dominant economic activity since the 1790s. Many houses have been upgraded rather than replaced, keeping the original architectural form. Some of the churches in the area are over 100 years old and are still maintained and used.

An understanding of how the residents perceive their community was gained from the public consultation program. It is 'quiet, and has a rural agricultural nature', a 'strong, closely knit community', 'a good place to raise children', and 'strongly religious with a traditional emphasis on work ethic and Christian living'. When asked in the Phase 4B Resident Interviews about important characteristics of the area, the following responses were noted: peace and quiet, way of life/country lifestyle/ small town atmosphere, clean air and environment, open space and lack of industrial development.[1]

The residents and the Township's Council have expressed a strong desire to maintain the existing community character and planning policies have been put into place to preserve the agricultural nature, protect existing uses and reduce conflicts among permitted uses.

To assess the potential impacts which the OWMC facility may have on a community, indicators of community character were identified in the 4A Report (Institute of Environmental Research 1985). The indicators used in Phase 4B are 'compatibility of land use', 'visual compatibility'; and 'public perception of compatibility'. A discussion of these indicators will help in understanding the potential magnitude and severity of possible changes. These changes cannot be quantified or described in detail, since future impacts will be based primarily on the perceptions of the public and their subsequent reactions.

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1. Questions 58 and 59.

9.8.1 COMPATIBILITY OF LAND USE

The dominant land use in the area is rural agricultural, with 83% of the total land use being rural or vacant and the majority of the rural land designated as 'agricultural'. The most recent Official Plan (OP) Amendment identifies as 'agricultural' those areas with the best soil. They have been protected for present and future agricultural uses and non-farm uses are minimized. The OP also designates 'rural' areas. These are areas preserved for direct and indirect agricultural uses. The plan notes that urban and industrial uses will be contained in Smithville and areas of land with lower agricultural capabilities predominantly in the western part of the Township. It is intended that most of the industrial development will take place in the Smithville industrial park.

The development of the large OWMC industrial complex on 124 hectares of 'agricultural' land will result in an obvious change to the area and is a contradiction of the intended character and image of the area.

The community character could be affected if the proposed facility attracts industry to the area. Many factors play a role in the selection of a site for an industry, of which the services of a hazardous waste treatment facility may be only one consideration. It has been concluded that the services offered by the OWMC facility would not be sufficient by themselves to attract industry to the area (Morehouse Economic Planning Consultants 1987). However, the presence of an industry (in this case, the OWMC facility) can be sufficient to encourage new industry to locate in the Township (i.e., the overall level of economic activity becomes an attraction to other industry). The extent and timing of any influx is difficult to predict (Morehouse Economic Planning Consultants 1987).

It is unlikely that industry would be permitted in the local community. Current municipal policy directs industrial uses primarily into the Smithville Industrial Park, and the intent of Municipal, Regional and Provincial land use and development policies is to preserve and support present and future agricultural uses in the local community. Hence a change in character of the local community through the location of industry in the area is not anticipated.

9.8.2 VISUAL COMPATIBILITY

Since the main characteristic of the West Lincoln community is its rural agricultural nature, the presence of the facility (especially the incinerator stack, which will be seen for up to five kilometres) will visually impact the community character. At the present time, the area of the proposed OWMC site is dominantly 'open' in a visual sense. Features such as croplands, marshes, fallow and recently disturbed fields, woodlots and farm buildings would be lost from view. They would be replaced by a visual barrier at the perimeter of the site which would not permit views into or across the site at ground level.

There will be a loss of existing rural residences and farms and the introduction into the landscape of an industrial facility with tall stacks, plumes, buildings and berms.

9.8.3 PUBLIC PERCEPTIONS OF COMPATIBILITY

Comments received during the public consultation program suggest that residents feel the OWMC facility would be incompatible with the character of the area. Residents noted that the nature of the facility was contrary to the rural/agricultural character of the community. Forty respondents (20%) to the Phase 4B Resident Interviews reported that their satisfaction with the area would be diminished because the facility would affect the character of the area.[1] A total of 106 respondents (45%) felt that the facility would attract industry to the Township[2] and 20 (22%) of these respondents suggested that this would lead to a change in the area's character.[3]

9.8.4 EVALUATION

It is evident that the OWMC facility will have an impact on community character. In the past the area has developed at a slow pace maintaining the traditional community character. The Official Plan indicates that this type and pace of growth is acceptable to the area residents and has encouraged this to continue into the future. The development of the OWMC facility will result in the intrusion of an industrial activity into the midst of an agricultural and rural community. This intrusion will disrupt the qualities which attracted and satisfied area residents in the first place. Repercussions could be felt in the levels of community satisfaction, stability and cohesion.

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[1] Question 62(b).

[2] Question 88(e)(i).

[3] Question 88(e)(iii).

An indirect impact on community character through the attraction of new industry to the local community is not anticipated. Some impact may be experienced in the Township as a whole but the level and extent of impact is not possible to predict at this time (Morehouse Economic Planning Consultants 1987).

The visual mitigation measures noted in Section 9.5.2 should reduce the contrast of the proposed facility with the surrounding environment, diminishing the degree of visual incompatibility with the local community. OWMC's policy to maintain off-site properties under its ownership in compatible uses (e.g., agriculture) should reduce the impact on community character also. However, these measures will not totally overcome the impact on community character.

9.9 CONCLUSIONS

The standard social impacts associated with the OWMC facility include the displacement of residents, nuisance impacts, access route impacts, change in the demand for community and recreation features and alterations in community character.

It is anticipated that displaced households will encounter some difficulties. The degree of hardship will vary, however, depending on individual and household characteristics, ties with the community and personal circumstances. It is possible to compensate for the physical and economic features of home and community and to minimize psychological and social impacts. However, it is not possible to compensate for all impacts. Impact management measures have been suggested that will provide an approach to minimize the hardship experienced by displaced households.

Nuisance impacts including noise, visual intrusion, night lighting, dust and odours, are expected generally for those households nearest the site. Of these, noise is anticipated to be the greatest impact, particularly that associated with the landfill activities. Noise levels in excess of the ambient noise levels and MOE criteria are anticipated. The noise will intrude upon the peace and quiet valued by residents; the industrial nature of the noise (a constant, low level background hum) will be out of character for the area. Consequently, the noise impact will likely be seen as significant. Some mitigation measures may be possible but would be limited in effect; residual noise impacts will remain. No recreation or community features are expected to receive increased sound levels.

The proposed facility will provide a constant visible reminder of its incongruent nature in contrast to the rural character of the area. In addition to a change in land use, valued features such as woodlots and farmland will be lost. The facility will impose a visual impact on the local community and the country atmosphere will be broken by the industrial complex. Bethel Community Church will experience moderate visual impact. Some limited effects may be experienced by a proposed campground/trailer park located to the east of the site. It is not certain, however, if or when the campground will be developed.

It is not possible to quantify the degree of impact of facility night lighting. The lighting will create a change in the area for the duration of the site life, resulting in a noticeable 'glow' in the night sky that will be out of character for the area. No direct impacts (i.e., change in residents' activities) are anticipated. Impact management measures to reduce the effects of night lighting are limited; it will not be possible to eliminate the impact.

The anticipated dust impacts will be at the level of an occasional short-term inconvenience for some households. The impact will not likely affect activities or the use and enjoyment of property to a significant extent. Impact management measures can reduce, but not completely eliminate, the dust levels.

The frequency of off-site odour impacts is uncertain, and their magnitude will vary depending upon the type and amount of waste material involved and weather conditions present at the time of any spill or emissions. The distance from the site over which odours would be experienced is not clear; it will likely vary also. Conceivably, odours could affect the use and enjoyment of property over the short-term. Odours could have implications for special impacts, as they provide tangible evidence of the emissions residents are concerned about.

The standard impacts that might be associated with the transport of waste materials along the designated access route are expected to be insignificant. The residents, however, are very concerned about potential risks to health and safety. These concerns are addressed in Chapter 11.

Few, if any, changes in demand for community and recreation features are anticipated to result from the displacement of residents or movement of the households most severely impacted by nuisances (i.e., those eligible for buy-out).

Development of the OWMC facility will result in the intrusion of industrial activity in a rural-agricultural community. Visually, farmland, farm buildings and woodlots will be replaced by industrial buildings, stacks, plumes and berms. Characteristics valued by the residents, such as clean air, peace and quiet, and country lifestyle, will be altered by the nuisance impacts associated with the facility. In short, the OWMC facility will result in an obvious change to the area and is a contradiction of the existing community character and image.

The standard impacts associated with the proposed facility and residents' perceptions of them will have repercussions in terms of the special impacts, as they may influence residents' behaviour. The attitude of residents toward the community (i.e., satisfaction with the community as a place to live) could be affected or residents could decide to move to another community that would provide them with the attributes they value. The impact management measures implemented by OWMC to address the standard impacts will affect the acceptability of the facility. Further impact management measures are identified in Chapter 12.

CHAPTER 10

SPECIAL IMPACTS

10.1 INTRODUCTION

This chapter documents the special impacts which could be associated with the proposed OWMC facility. Special impacts are those impacts resulting from perceptions of the facility or the risk associated with the facility. The factors addressing special impacts are satisfaction with the community, stress, community stability, cohesion and character.

Of particular significance to the special impacts are the residents satisfaction with the community and the extent to which they experience stress because of the proposed development. Satisfaction with the community and stress are both dealt with in detail below in Sections 10.2 and 10.3, respectively.

The potential impact on stability and cohesion is assessed in Sections 10.4 and 10.5 through a consideration of the out-migration and in-migration which could result from the development of the proposed facility. Impact on community character is discussed in Section 10.6.

10.2 SATISFACTION WITH COMMUNITY

10.2.1 INTRODUCTION

Community satisfaction can be defined as the level of satisfaction a resident feels with regard to their community as a place to live. This level of satisfaction influences, to some extent, the degree of cohesion found within the community as defined by the level of interaction and degree of interdependence of individuals, groups and institutions.

The siting of a hazardous waste management facility within the local community may contribute to community dissatisfaction. This analysis will outline the current (pre-OWMC) and perceived (post-OWMC) levels of community satisfaction in order to determine the possible future changes as a result of the OWMC facility.

Resident interview results[1] and public consultation comments[2] were used as sources of information for the analysis.

For the purpose of this analysis, 'community' is geographically defined as the area known as the 'local community'.[3]

10.2.2 CURRENT COMMUNITY SATISFACTION

Evaluating the level of community satisfaction is a function of specific assessments of the component parts of the environment acting together (Marans and Rodgers 1975).

For the residents of the local community, satisfaction is currently quite high, with approximately 96% of those interviewed being satisfied with the area as a place to live (no respondents reported dissatisfaction with the area).[4]

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[1] Unless otherwise noted, all question numbers referenced below pertain to the Phase 4B Resident Interviews (Appendix D).

[2] These include comments made at Kitchen Table and One-on-One Meetings, interviews with Key Contacts and OWMC Regional Meetings and Drop-In Centres.

[3] The local community is defined in detail in Chapter 5, Section 5.3.

[4] Includes those reporting that they were 'satisfied' or 'very satisfied' for Question 57.

Residents appreciate the rural character of their community. When asked in an open-ended question what were the three most important characteristics liked about the area, 'way of life/country atmosphere/small town atmosphere' and 'peace and quiet' were mentioned most often (47% and 45% of respondents, respectively).[1] Provided with a list of characteristics, similar choices were indicated as being most liked: 'peace and quiet' (91%), 'open space' (90%), 'clean air' (90%), and 'absence of industrial development' (86%).[2]

Residents also stated their general satisfaction with the community services available throughout the area,[3] including:

- schools
- shopping facilities for daily needs
- medical and health services
- maintenance of Regional Roads
- police department
- fire department
- recreational facilities and services
- maintenance of township roads

When asked about problems in the area, 'lack of political clout' was mentioned most often (35%); trouble with water quality/quantity (31%), odours (17%) and traffic (16%) were also mentioned.[4]

The majority of those interviewed (75%) stated that if they had to move (assuming the OWMC facility is not built), they would relocate within the West Lincoln community (11% of respondents were undecided).[5] This indicates that most area residents are generally satisfied with the community as a place to live.

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[1] Question 58.
[2] Question 59.
[3] Question 61.
[4] Question 60.
[5] Question 63.

Given the nature of the interview responses, it appears that the rural-agricultural lifestyle attracted many of the residents to the community and is a factor which induces people to remain in the community.

Apart from the environmental characteristics and available community services and facilities, the social ties established between neighbours are also a factor which influences the level of satisfaction residents experience with the community. Resident involvement in community activities, the interest which residents have for each other and the proximity of residents to relatives and friends combine collectively to enhance community cohesion.

West Lincoln residents are generally satisfied with their community. The area offers highly regarded environmental qualities, adequate community services and facilities, as well as the opportunity for developing and maintaining social ties. Together these components act to create a community atmosphere which residents find quite satisfying.

10.2.3 PERCEIVED FUTURE COMMUNITY SATISFACTION

Interview results show that community satisfaction will be affected as a result of the announcement of the preferred site for the OWMC facility in West Lincoln Township.

Seventy-seven percent (77%) of those interviewed thought that the OWMC facility would affect their satisfaction with West Lincoln as a place to live (11% were undecided).[1] The reasons stated can be grouped as follows:

- environmental concerns;
- living standards/community quality concerns;
- transportation concerns;
- health concerns; and
- safety concerns.

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[1] Question 62a.

Factors resulting in reduced satisfaction included air pollution (25%), change in character of the area (22%), health dangers (20%), and transportation concerns (19%).[1]

Collectively, these concerns illustrate the residents' beliefs that the OWMC facility will affect the existing conditions found in the local community. More importantly, if the facility does negatively impact any of the characteristics most liked about the area, community satisfaction will be affected for the worse.

Peace and quiet may be disturbed by the increased noise levels that will occur during the construction and operation phases of the facility, as well as the truck traffic associated with each phase. The clean air may be disrupted by emissions from the incinerator, or dust from landfilling and OWMC truck traffic. These changes may disrupt the country lifestyle associated with the local community, further affecting the residents' level of satisfaction with the community.

The residents perceive a change will occur in their quality of life as a result of the OWMC facility. Their satisfaction with the local community will consequently decrease. As one resident wrote to OWMC:

> *"We love our community and the people that live here. The OWMC has turned our lives upside down and this made a lot of our friends very unhappy."* [2]

10.2.4 EVALUATION

The West Lincoln community possesses a rural character that the residents find very satisfying. Given the current level of satisfaction with the West Lincoln community, locating a hazardous waste management facility in its midst will change the character of the area and reduce community satisfaction.

The current level of community satisfaction in the local community is relatively high. The quality of environmental features, community services, and facilities, coupled with the opportunities for social interaction make the West Lincoln area a desirable place to live.

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1. Question 62b.
2. Letter sent to OWMC Chairman, D.A. Chant, on October 1, 1986 from a West Lincoln area family.

Locating the OWMC hazardous waste management facility within the West Lincoln community will have effects on the current level of community satisfaction. The peace and quiet, clean air, and absence of industrial development as well as the extensive social ties between residents all combine to make West Lincoln an attractive community.

A disruption in this way of life would understandably decrease the level of community satisfaction since the very characteristics which the residents find most appealing would be negatively affected. This decreased level of satisfaction could result in households moving out of the area, and thus further impact community stability and cohesion.

Impact management measures which minimize the disruption of the residents and community as a whole and maintain or enhance the attributes of the area valued by the residents can help limit the potential for loss of satisfaction with the area as a place to live. Recommended impact management measures are discussed in Chapter 12.

10.3 STRESS

The quality of one's physical surroundings influences mental and physical responses. When exposed to surroundings which are considered sub-optimal, negative emotions will result in stress. Stress can be defined broadly as "any situation in which the environmental demands on an individual exceed their ability to respond" (Evans 1982, 1). Stress is the perception or appraisal of a situation or event as threatening, harmful or dangerous and the emotional, behavioural and biological responses (including the search for coping mechanisms) which result. The actual threat may be less important than the perception of what may occur.

The announcement of OWMC's preferred site and the operation of the hazardous waste management facility have the potential to cause stress in the community. The stress results primarily through residents' concern for their health and safety. Concern about decreased property value, a change in community character and a feeling of hopelessness in dealing with big government also contribute to stress. Stress has an impact on family relations, satisfaction with the community and a willingness to take part in community activities. The responses of individuals to stress can have implications in terms of community cohesion, character and stability. Thus, it is important to discuss the community stress experienced, both presently and in the future, by West Lincoln residents

10.3.1 DEGREE OF STRESS

The degree of stress experienced by an individual is related to their perception of the source of stress and is influenced by a person's individual coping methods, how those around them are coping, and their personal interest in the problem (Bacharach and Zautra 1985). The actual degree of community stress is difficult to quantify since individuals can experience varying degrees of stress in relation to the same threatening situation.

It is known that some degree of stress is now being experienced in the community, as a large number of residents (42) made reference to stress during the public consultation process.[1] Over 60% of those interviewed (147 respondents) reported experiencing more stress in the previous year. More than three-quarters of these respondents (76% or 111 respondents) attributed the announcement of OWMC's preferred site as the source of stress.[2] It is not known how all individuals are coping with the stress they attribute to OWMC, but some residents are doing so by actively involving themselves in opposing the OWMC proposal. In doing so, they have been put under considerable stress in trying to meet with politicians and OWMC officials to discuss the facility and the siting process, finding other experts to help interpret studies and results and raising funds to battle the facility. This has required enormous expenditures of energy and commitment, some of which have taken away from family and economic pursuits; this has further increased the stress levels of the individuals involved.

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1. Activities included Kitchen Table and One-on-One Meetings, interviews with Community Leaders, and OWMC Regional Meetings and Drop-In Centres.
2. Question 83.

Obviously some residents feel a greater personal interest in the outcome of the OWMC proposal than others, such as those who perceive their livelihood as being threatened, as well as their homes and family. The livelihood of farmers, for example, depends on environmental quality, which they perceive could be negatively impacted by facility operations. These residents may experience a greater intensity of stress than others.

10.3.2 SOURCE OF STRESS

The primary source of stress experienced by residents near the OWMC preferred site is their perception of the risks associated with the facility. It has been stated in the literature that the factors affecting stress associated with a facility similar to OWMC's are related to:

- the residents' perceived lack of control over decisions and impacts;
- residents' trust and the perceived credibility of the operators and decision makers;
- the quality of information received by the residents about the facility.[1]

Residents have expressed feeling a lack of control, not just in the decision-making process, but also in their personal lives. Fifty-two percent (52%) of those interviewed feel that they will not be able to influence the final decision on site approval.[2] This lack of control is closely tied to feelings of uncertainty about the future. In various public consultation forums residents noted that there was some uncertainty in their lives stemming from the OWMC proposal and/or that their future plans had been put on hold. Others expressed a general concern regarding uncertainty about their future. Some were more specific in their remarks, stating that they felt a lack of control over their property, and that their family and friends' lives had been disrupted. One stated, "We can't move, we can't sell, we're hostages of the site."[3]

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1. See, for example, Bachrach, Kenneth and Alex J. Zautra, "Coping With a Community Stressor; the Threat of a Hazardous Waste Facility," Journal of Health and Social Behaviour 1985, Vol. 26 (June), 127-141.
2. Question 81a.
3. Helen Kszan, resident of West Lincoln, noted in the Niagara Falls Review April 25, 1986, "Stress in West Lincoln due to OWMC plant plans."

The technical nature of the OWMC facility has made potential impacts difficult for the average resident to understand. The residents have had to rely on OWMC, the media and opposition groups to provide them with the information about the project. Because of the controversial nature of the project, the community is exposed to variable and contradictory information. Suspicions and community stress are heightened if residents believe that they are being misinformed or are not receiving sufficient information.

Fifty-eight percent (58%) of those interviewed felt that information from OWMC helped them to understand this facility.[1] Forty-four percent (44%) said that no improvements could be made to the information OWMC provides and thirty-nine percent (39%) offered criticisms and made suggestions as to how the information could be improved.[2] Many of these criticisms were constructive; others indicated some cynicism, stating that the information should be more honest and less biased. Seventeen percent (17%) of the residents who believe that OWMC information is not useful reported feeling distrust of OWMC.[3] During the public consultation process a large number of residents expressed skepticism with regard to the information or assurances of the OWMC and its consultants. Another 12 residents made various comments relating to the quality of information, such as:

- OWMC does not give straight answers, they are not telling the whole story;
- we don't believe the information; and
- there is a lack of consistency between the earlier and more recent reports presented by OWMC.

The stress currently experienced by residents relates to the announcement of the preferred site and their expectation of what might be built and how it might operate. The operation of the proposed facility will also create stress for residents in the vicinity of the facility. If residents are unaware of how the facility is operating, or if problems are encountered at the facility, many will have heightened levels of concern. Stress will also increase if complaints are registered and no clear or satisfactory response follows.

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[1] Question 95a.
[2] Question 97a and 97b.
[3] Question 95c.

The degree of stress which residents would experience if the OWMC facility is built is difficult to determine. Given resident's concerns for health and safety, and the current stress in the community, the potential exists for considerable stress if the proposed facility is built. There are a number of approaches that can be taken to decrease the degree of stress experienced and these are discussed in Section 10.3.4.

10.3.3 PERCEIVED FUTURE IMPACTS

Members of the West Lincoln community believe that their outdoor social and recreational activities would be affected, and a number of those interviewed noted worry, uncertainty and other 'emotional' concerns relating to their future activities.[1] Fourteen percent (14%) reported that uncertainty about what will happen will affect their satisfaction with the community.[2]

10.3.4 MITIGATION

There are three possible approaches to decreasing the degree of stress experienced by residents (Baum et al 1983):

- reduce the duration of exposure to the threatening situation;
- increase the feeling of public control; and/or
- increase the degree of perceived safety.

The first option is not feasible unless the OWMC chooses not to build the facility in the West Lincoln area. The other two are alternatives that would indicate an understanding on the part of the OWMC as to the causes of community stress and how it can be addressed. Seven residents specifically noted during public consultation that compensation should be awarded to the residents for the stress they were experiencing. The need to study community stress and its potential impacts on the residents of West Lincoln was noted at one of the kitchen table meetings.

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[1] Question 52c (values ranged from 8% to 28%).

[2] Question 62b.

10.3.5 EVALUATION

The OWMC proposal has created a significant degree of stress within the community This stress is due primarily to the public's perception of a lack of control over decisions concerning the facility and their future. Also, community stress has been magnified due to a lack of trust on the part of residents and the perceived lack of credibility of OWMC and its consultants. Further, if the facility is built, it is expected that the degree of stress will increase. The stress can be addressed in part by increasing public control, ensuring safety and providing ongoing operational information. A number of means to reduce the degree of impact from stress are discussed in Chapter 12.

10.4 COMMUNITY STABILITY AND COHESION

Community stability is defined as a measure of a community's inclination to change and/or to maintain social continuity. If there is a significant change in the community's population or in the social institutions which maintain and promote the community's goals and values, this continuity could be disrupted. The development of the OWMC facility has the potential to affect the stability of the local community. In anticipation of, or in response to, negative changes in the community's physical environment or social system, residents could decide to move out of the community. In-migration of new households to replace any out-migrating households and any facility employees who chose to move to the local community could affect stability also.

Community cohesion refers to the amount and quality of social relations and interactions within a community and the attraction to, or identification with, the community. It is related to the extent of use of local facilities, participation in the community, commitment and satisfaction with the community and the extent of neighbouring among residents. The proposed hazardous waste management facility could change the cohesiveness of the local community in a number of ways. Through out-migration, friends and relatives could be lost for those who remain behind. Community group members and leaders could be lost from the community also. Residents could withdraw from the community, thereby changing the relationships in the community. Community and recreation features contributing to the cohesiveness of the community could be negatively affected through out-migration and/or disruption through facility-related activities. This could potentially result in a change in demand for services and/or a loss of effectiveness. Similarly, the loss of membership or leaders of a community group could affect the viability of a group.

The responses of the residents to the facility are the key factors in determining the implications for stability and cohesion. The two types of responses noted above are out-migration and withdrawal from involvement in the community. The responses of individuals are difficult to determine, and thus there is a great deal of uncertainty and a limited ability to project impacts. With respect to resident withdrawal from the community, no indication is available as to whether this will or will not occur, or to what extent. Thus, no attempt is made to assess this aspect of cohesion. The potential for out-migration is difficult to determine also, but is more amenable to assessment. Out-migration scenarios have been developed to assess the implications for community stability and community cohesion.

The extent of out-migration that does occur will depend on a number of factors that influence an individual's decision to stay in a community or to leave. There are two factors that can act as incentives encouraging people to move. The first is the prospect that moving will result in an overall improvement in living conditions. The second is that moving might provide an opportunity to leave behind a situation perceived negatively by the mover. This would be the primary motivation for residents leaving as a result of the OWMC facility.

Other factors influence an individual's decision to stay in a community. Economic constraints may prohibit a household from leaving their home, as might an inability to change jobs or relocate a business. It may be difficult to obtain an equivalent quality of housing elsewhere with the money received for currently owned real estate. Often, moving can involve the severance of ties to friends, relatives, social groups or places that are highly regarded. If the prospect of moving is associated with an uknown or uncertain future, this will serve to inhibit moving even more. Groups that are more likely to be subject to these factors may be less inclined to move, or if they do move, will suffer a higher degree of impact than the average person. These groups include the elderly, residents with a high degree of social or family ties, ethnic minorities, members of rural communities, long-term residents, low-income groups, homemakers, homeowners, and those with lower levels of education (Colony 1972; Finsterbusch 1980; Fischer et al. 1977; Flynn 1982; Goldhaber et al. 1983; Heller 1982; Hill and Frankland, undated; Johnson and Burdge 1974; Love 1978).

The important point is that there are a number of factors that influence the decision to move. The choice an individual will eventually make, the reasons for it, and the ultimate effects of the decision, are not easily determined.

Some residents have indicated, through the resident interviews, that they intend to move from the community should the OWMC facility be built. How many will actually move is unclear. For some, reporting their intention to move is a means of expressing their opposition to the facility. Others, when making the final decision to move may, for any of the reasons noted above, decide to stay or be unable to move. Some of the residents who indicated they would not move or were unsure, could decide to move.

Little research exists regarding the responses of individuals to facilities such as the proposed facility, and the social impact assessments of other major facilities have not considered out-migration. Studies of out-migration relating to the accident at Three Mile Island (TMI) suggest that little migration does occur (Flynn and Chalmers 1980, Flynn 1982). In the absence of any guidelines or documented evidence of the level of out-migration which could be expected, three scenarios have been developed assuming varying levels of out-migration.

The out-migration scenarios assess potential changes in stability and cohesion through consideration of impacts on residents, community and recreation features and the community. Consideration is also given to the characteristics of potential out-migrants which could result in them experiencing hardships if they do move from the community.

Little information is available for the assessment of the in-migration which could occur and hence in-migration is not included in the three scenarios. The potential implications of in-migration are discussed in a general manner, however, following the out-migration scenarios.

10.4.1 SCENARIO ANALYSIS

Information about the possible effects of OWMC-related out-migration is available from two sources: the agency contacts made during Phase 4B, and the Resident Interviews. The Resident Interviews provided the number and characteristics of potential out-migrants, their use of schools and churches and membership in community groups. Consideration was given to the characteristics of potential out-migrants including their length of residence, tenure, ancestral ties to the community and their property, satisfaction with community, relatives and close friends in the community, interactions with neighbours and community involvement.

The Agency Contacts provided information on the level of use and characteristics of community and recreation features.

Prior to assessing the potential impact on community and recreation features, it was important to distinguish between those whose use is primarily local and those exhibiting a broader base of use. Features that draw most of their users from elsewhere in the Region and beyond, or from Smithville for instance, will be less likely to experience impacts on their use as a result of the OWMC facility. These features were identified and screened from the analysis. Table 10.1 lists these community and recreation features. Other features, due to their small size or emphasis on local users, may experience impacts as the result of out-migration and are considered in the assessment below. Table 10.2 lists these features.

The resident interview results provided information on the schools and churches attended by potential out-migrants and their membership in community groups. In some cases these can be compared with current trends in membership and use for various features to provide an indication of potential impact. In terms of community group membership, predictions are more general, as interview questions did not deal with specific groups, but with types of groups.

TABLE 10.1
LOCAL COMMUNITY AND RECREATION FEATURES NOT LIKELY TO BE IMPACTED BY RESIDENT OUT-MIGRATION

Emmanuel United Church

Gainsborough Conservation Area

John Calvin School

Niagara Regional Sportsmens Gun Club

Riverview Golf and Country Club

Silverdale Gun Club

Smithville District Christian High School

St. Ann's Community Church

Wellandport Branch, West Lincoln Public Library

Wellandport Christian School

Wellandport Community Centre

West Lincoln Co-op Nursery School

TABLE 10.2
LOCAL COMMUNITY AND RECREATION FEATURES POTENTIALLY IMPACTED BY RESIDENT OUT-MIGRATION

Bethel Community Church[1]

Bismarck United Church

Boyle Brethren in Christ Church

Dufferin Masonic Lodge

Gainsborough Centennial Hall

Gainsborough Central Elementary School

Oddfellows Temple

Riverside Christian Reformed Church of Wellandport[2]

Silverdale Community Centre

Silverdale United Church[1]

Notes:
1. These churches indicated they might close if members of their congregations left because of OWMC.
2. It is not expected that this church would experience significant impacts due to the large size of its congregation (400-450 average attendance). Out-migrant attendance data for this specific church is not available; in the interview results it would be included as 'other Wellandport churches'.

In some cases, the interviews did not provide specific information on the use of potentially impacted features. Information on membership and use, and concerns expressed by their representatives, can provide an indication of potential impact. As very little information was available in this regard for the Dufferin Masonic Lodge, it is not possible to determine effects on this feature, although a concern was expressed that the Lodge might be affected if members moved out of the area because of OWMC. The Gainsborough Centennial Hall draws users from the Township of West Lincoln and is used 5 to 6 times a month. The representative from this feature felt that if agriculture in the local area was negatively affected, it could be reflected in use of the hall. Members of the Oddfellows Temple live within an eight mile radius of this feature. The hall is rarely rented, as it has no liquor licence. As no membership figures were given, and no concerns raised by the representative, it is difficult to predict possible changes in demand. The Silverdale Community Centre is used by residents in the Silverdale area, approximately 6 to 8 times a month. The representative felt that if people leave the area, the feature may be used less often. The Centre is located approximately 4 km north of the site, and the out-migration of residents might affect the use of this feature.

The impacts on community and recreation features described below may be somewhat conservative for two reasons. Residents who indicated in the interviews that they would not move, or were unsure, may in fact leave. Secondly, residents who were not interviewed may also move. However, it should be pointed out that even if residents move out of West Lincoln, the degree to which they maintain their ties with various groups is difficult to predict. A consideration of where people may move to can provide an indirect measure: it can be assumed that those moving outside of the Niagara Region would sever all ties with community and recreation features or local groups, while at least some of those moving elsewhere within the Region might maintain these links. This would modify the impacts on community and recreation features described in the scenarios, where it is assumed that all movers sever their links to schools, churches, and community associations. The degree to which the effects of a) the destination of movers, and b) movement of residents that were not interviewed, or did not say they would move, offset each other is not known.

There are a number of assumptions applicable to all scenarios:

- all on-site residents are displaced (3 households);
- all residents eligible under OWMC's buy-out policy relocate (12 households);[1,2]
- the number or characteristics of the households replacing any other movers in the direct impact zone (DIZ)[3] or study area cannot be accurately predicted. It has been estimated that approximately 27 OWMC employees and their households will locate in West Lincoln (Morehouse Economic Planning Consultants 1987). It is not possible to determine whether they would choose to live in the study area or elsewhere; in any event, their effect should not be significant in these scenarios.

Scenario 1: Assumes all 'on-site' residents and those eligible for OWMC's buy-out policy relocate. In the analysis of the characteristics of movers, their impacts on community and recreation features, and on the community itself, only interviewed residents will be considered - no extrapolations will be made. However, an estimate of the total number of households and residents will be made. This same principle applies to the other two scenarios as well.

Scenario 2: Assumes 'on-site', 'buy-out' and all surveyed residents in the Direct Impact Zone who said they would move if the OWMC facility is built (from question #66 in the Phase 4B Resident Interviews) actually do relocate. An estimate was made of the proportion of residents who did not know if they would move, did not answer the question or were not interviewed, but could be expected to move.

Scenario 3: Assumes on-site, buy-out, and all surveyed residents in the study area who said they would move, and a proportion of 'other' interviewed and non-interviewed residents actually do relocate.

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1. At this point in time, property #75 (10-103) has been included in the 'buy-out' properties. It is not clear whether it will be expropriated for the Schram Road realignment; property #32 (10-158) has been excluded from the scenarios as it is currently vacant.
2. For a description of OWMC's buy-out policy, see Chapter 9, Section 9.5.6 of this report; for more detail, see Ontario Waste Management Corporation. Background Material for the Ontario Waste Management Corporation - Phase 4B. Public Consultation Site Assessment Meetings. 1987.
3. The direct impact zone is described more fully in Section 12.2 of this report or in Background Material for OWMC Phase 4B Public Consultation Site Assessment Meetings, Ontario Waste Management Corporation, June 1987.

There are three basic constraints on the development of out-migration impact scenarios:

- It is difficult to determine how many of those who said they would move will in fact leave. Some of those interviewed were simply making a statement about their opposition to the proposed facility by indicating that they would move. It is possible that after more consideration they would change their minds about leaving the community. For these scenarios, it will be assumed that all those who said they would, and a proportional number of the 'unsures', those who did not answer the question, and residents who were not interviewed do in fact move. A somewhat conservative estimate in terms of the impact on community and recreation features is implied, as only surveyed residents will be included in that analysis.
- Although 'movers' were asked where they would relocate, whether those who choose to stay within the Niagara Region would retain their ties to local churches, schools and community groups is difficult to know.
- Three basic questions regarding replacement of out-migrants can be asked:
  - how many will be replaced?
  - by residents with what characteristics?
  - at what rate or over what time period will in-migration and adjustments to the community[1] occur?

As noted earlier, it is assumed in these scenarios that out-migrating residents will not be replaced.

Impacts associated with the three scenarios will be discussed in turn, beginning with Scenario 1. Tables showing the data for the three scenarios are contained in Appendix H.

Many out-migrants may feel that they are being 'forced to move' because of the development of the proposed facility in their community and could experience hardships similar to those who are displaced. The characteristics of potential residents which could make them more vulnerable to hardships associated with an unwanted move are noted in the discussion below, under 'Impacts on Residents' for each of the three scenarios.

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[1] In-migrating residents generally require at least 2 years to adjust to the new community (Cluett et.al. 1979).

10.4.4 SCENARIO 1[1]

Impacts on Residents

Under the first scenario, 15 households (53 residents) would move. It is expected that residents who have lived in their homes or in West Lincoln for longer periods of time will find it harder to leave. Almost 50% of these households have lived at their current address for more than 10 years; more than 60% have lived in West Lincoln for more than a decade.

Relocation is generally believed to be more difficult for homeowners than for renters. More than 90% of these households own their homes. A similar factor possibly affecting relocation impact is whether one's property was owned by one's ancestors. More than 20% live on properties that were owned by their ancestors; at least one of these propterties has been in the family more than 100 years. If an individual has ancestors that lived in West Lincoln, they may have ties that make it difficult to move. One-third of these households have ancestors that lived elsewhere in West Lincoln. Two of these families (50% of those who had ancestors in West Lincoln) have been in the area for more than 100 years.

The impact of relocation on an individual will be influenced by their satisfaction with their present community. Almost 90% of the respondents indicated that they were 'very satisfied' with West Lincoln as a place to live. A similar proportion reported that there were reasons it would be difficult to move. The most commonly mentioned were:

Attached to home/area	(67%)
Reduction in property value	(50%)
Can't sell/no buyer	(33%)
Family in area	(17%)
Financial reasons	(17%)

The number of relatives or close friends residing in the local area will affect an out-migrant's ties to the community. Eighty percent (80%) of the respondents reported having close friends in West Lincoln; the majority had 3.[2] Approximately three-quarters have relatives in the area.

Another factor influencing an individual's attachment to an area relates to interactions

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[1] Scenario 1 includes 'on-site' and 'buy-out' residents.

[2] The question was phrased 'Think of your three closest friends and tell me how many live in West Lincoln' (Question 68).

Another factor influencing an individual's attachment to an area relates to interactions with neighbours. In terms of entertaining neighbours, 44% of the respondents do so on a weekly basis; more than 20% on a daily basis, and 11% monthly or quarterly. The rest do so less often. A majority (44%) assist their neighbours with non-farm help weekly, while 22% do so daily. About 13% provide non-farm help on a monthly basis. Almost 60% of the survey respondents provided farm help to their neighbours on a monthly basis. About 14% do so weekly. The remainder (almost 30%) did so only once a year or never.

Having children attending school is a factor in determining ease of movement; less than 40% of survey respondents in Scenario 1 have children in school. The willingness of an individual to leave a community is also influenced by their involvement in it. About 42% of the households reported membership in community groups. A number of these indicated involvement on group executives. Over 60% of the respondents in Scenario 1 attend church regularly.

Generally, the elderly experience greater impacts when moving; households with children may also have greater difficulty leaving a community. About 3% of the residents in Scenario 1 are under age 5; 30% are age 5 to 19. About 6% are over 65 years of age. The majority of survey respondents have some high school or a high school diploma (over 60%). Less than 12% have attended university; the figures are about the same for community college attendance. About 17% have attained an elementary level of education.

Certain occupations, such as farming or homemaking, may contribute to difficulty with moving. Forty percent (40%) of the respondents in Scenario 1 are farmers; about 14% are homemakers. Income levels relfect the resources one has available to facilitate moving. One-third of the households moving in this scenario earn less than $25,000 a year.

Impacts on Community and Recreation Features

As mentioned above, although some out-migrating households may choose to maintain their ties with the community, there will be households that were not surveyed that will leave the area and sever their ties. The degree to which these two factors offset one another is not clear. In this scenario, 25% of the residents interviewed indicated that they would move outside the Niagara Region.

No impacts are predicted for the enrolment of Gainsborough Central Elementary School, the only school located in the local community. Three other schools located outside the local community appear to face some impact from out-migration related to OWMC under this scenario. For South Lincoln High School, this could amount to a 0.4% drop in enrolment and would contribute to a decline expected over the next five years.[1] Both John Calvin School[2] and Wellandport Christian School[3] are anticipating future growth; only John Calvin School would experience a loss of enrolment under this scenario (1.2% of current level). Beamsville High School[4] would experience a minor loss of 0.1% of its present enrolment. These values are based on surveyed residents only; if those that were not surveyed or did not indicate that they would move are assumed to have the same school attendance characteristics, these values will approximately double.[5]

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1. Present enrolment 272 students; a 14% decline in enrolment is expected over the next five years. (Bob Crawford, Supervisor, Planning and Transportation, Lincoln County Board fo Education. March 31, 1987).
2. Present enrolment 241 students; about an 8% increase over the next six years is projected. (Source: Peter Torenvliet, Headmaster, March 23, 1987).
3. Present enrolment 292 students; project a 7.5% increase for next year (Source: Mr. W. Thies, Principal, March 31, 1987).
4. Present enrolment 957 students; project an 18% decline over the next five years. (Bob Crawford, Supervisor, Planning and Transportation, Lincoln County Board of Education. March 31, 1987).
5. Information with respect to school attendance from the Phase 4B Resident Interviews was used to estimate school attendance in households only surveyed in Phase 4A (questions about school attendance were not asked in that survey) and those not surveyed at all. It was assumed that households surveyed in Phase 4A or not surveyed at all have the same characteristics as those surveyed in Phase 4B. A factor of 1.9 (based on the Phase 4B survey response rate for those displaced or eligible for guaranteed purchase) was used to extrapolate Phase 4B resident interview results to the other households.

One-third of those attending church go to Smithville churches; another one-third attend St. Ann's Community Church. The remainder are split equally between churches in Wellandport or elsewhere (17% each). None of the 5 churches indicated in Table 10.2 as potentially experiencing impacts appears to actually be affected by out-migration in Scenario 1.[1]

Impacts on individual community groups cannot be directly predicted, but it is possible to estimate the percentage of certain types of groups that would lose members from their general ranks or the executive. Fifty-two percent (52%) of those interviewed in the study area are members of community groups or associations; in contrast, the figure is 42% for the out-migrants in Scenario 1. Loss of out-migrant members would mean a 6% decline in overall group membership. Under Scenario 1, church groups would experience a 9% decline in membership and a 5% loss of executive members.[2] Agricultural groups would lose 5% of their members and 17% of their executive. Social clubs would see a 3% loss of general members, and 10% of their executive.

Impacts on the Community

The most obvious impact on the community relates to the number of households and residents that leave the area. As mentioned earlier, it is difficult to know how many of those who said they would, will in fact move; whether they will be replaced; by what type of resident; and at what rate in-migration and adjustment to the community will occur. Under Scenario 1, 15 households (53 residents) will be moving. This represents about 2% of the households and residents in the local community, and less than 1% of those in the Township of West Lincoln. These losses could contribute to the present decline in growth rate in West Lincoln. Movement of out-migrants into Lincoln, Pelham or Wainfleet would contribute to the growth of these municipalities, which has been slowing somewhat recently (with the exception, perhaps, of Pelham).

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[1] Because of number of local residents did not participate in the interviews or refused to answer questions regarding church attendance or intention to move, it is possible that smaller churches, particularly Bethel Community Church, may experience impacts from out-migration that will not be revealed in this analysis.

[2] Includes surveyed residents only (for both total study area and out-migrant values).

Out-migration could result in alterations to the ethnic character of the community. The group appearing to be most impacted is the Greek community, which would experience a loss of 33% in Scenario 1.[1] The Ukrainian community would decline by 20%. Other groups do not experience large losses or can be considered as less likely to experience impacts specifically related to ethnicity (i.e. those claiming to be English or Canadian).

The out-migration of farmers from the community could result in a shift in community character. Under Scenario 1, the number of households lost from the farming community would be about 5% (8 farm operations).[2]

Several of the factors described above regarding the impacts on individuals can affect the stability and cohesion of the community. In terms of stability, the length of residence of movers is important. One-half (50%) of the households in Scenario 1 have lived at their current address for more than 10 years; 18 households (62%) have lived in West Lincoln more than 10 years.

Community cohesion could be affected by the number of close friends and relatives in the area, interactions with neighbours (i.e. entertaining, helping), and involvement in community groups. These impacts could be offset somewhat if the friends/neighbours/relatives also choose to move. The majority of out-migrants have close friends in West Lincoln (80%); about three-quarters have relatives in the area. Almost 70% entertain their neighbours on a weekly or daily basis. Over two-thirds reported helping their neighbours with non-farm tasks daily or weekly; assistance with farm help occurred less often (i.e. monthly).

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1. The small number of Greek households indicated in the interview results (and the subsequent relatively high impacts) may be related to a tendency by this group not to participate in the interviews.
2. For more information regarding agricultural impacts, the reader should refer to the separate volume by Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.

Roughly forty percent (40%) of out-migrants belong to community groups or associations. A number of these are on group executives. As described above, a number of types of groups will experience declines in membership from both their general ranks and their executives. Church and agricultural groups would be the most impacted.

10.4.5 SCENARIO 2[1]

Impact on Residents

In this scenario, 32 households (125 residents) would relocate. Almost 60% of these have lived at their current address for more than 10 years; more than two-thirds have lived in West Lincoln for more than a decade. About 90% own their homes.

Almost 40% live on properties that were owned by their ancestors; a similar number had ancestors elsewhere in West Lincoln. At least 3 of these families have been in the area for more than 100 years.

More than 80% of the out-migrants in this scenario said that they were 'very satisfied' with West Lincoln as a place to live. Almost 95% reported they would have difficulty moving. The reasons most often given as to why this would be so were:

Attached to home/area	(50%)
Reduction in property value	(42%)
Can't sell/no buyer	(33%)
Family in area	(17%)
Financial reasons	(17%)

Most respondents (56%) have three close friends in the area; approximately two -thirds have relatives in West Lincoln. The majority entertain their neighbours on a weekly (33%) or daily (33%) basis. Assistance with farm work occurs less often; 46% do so monthly; 18% weekly.

One-half (50%) of the out-migrants in Scenario 2 have children in school.

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[1] Scenario 2 includes 'on-site', 'buy-out', and residents within the DIZ who said they would move.

About 40% of the respondents are members in community groups or associations. A number are involved in group executives. Over half attend church regularly.

Approximately 9% of the residents in Scenario 2 are under age 5; more than a quarter are age 5 to 19; and about 3% are over 65. Most residents have a high school diploma (28%) or some high school (31%). Almost 25% have attained an elementary level of education. Values are roughly 10% each for attendance at either university or college.

Thirty percent (30%) of the respondents in Scenario 2 are farmers. Homemakers account for 16% of the out-migrants. Almost 45% of the out-migrant households earn less than $25,000 a year.

Impacts on Community and Recreation Features

In Scenario 2, 40% of the out-migrants reported they would relocate outside the Regional Municipality of Niagara.

Enrolment at Gainsborough Central Elementary School would drop by 3 students (0.7% of current enrolment). This would be in addition to an expected decline of 10% in the absence of OWMC. This value is for surveyed households only and thus represents a minimum estimate. If those households that were not surveyed or did not indicate that they would move are included in the estimate, the value would change to 8 students (1.8% of enrolment).[1] An overall loss of 12% could, therefore, possibly occur.

As a result of out-migration, South Lincoln High School could expect a drop of less than 1% from its current enrolment; John Calvin School, 1.2%; and Beamsville High School, 0.2%. Only John Calvin School is anticipating any future growth. Again, these are minimum estimates based on surveyed households. If households that were not interviewed or did not indicate that they would move are included in these estimates, the losses would increase by a factor of 2.5 as follows: South Lincoln High School - 1.1%; John Calvin School - 3.3%; and Beamsville High School - 0.6%.

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[1] Information with respect to school attendance from the Phase 4B Resident Interviews was used to estimate school attendance in households only surveyed in Phase 4A (questions about school attendance were not asked in that survey), those not indicating that they would move in the Phase 4B interview, or not interviewed at all. It was assumed that households surveyed in Phase 4B have the same characteristics as those not surveyed or who did not indicate that they would move. A factor of 2.5 (based on the Phase 4B survey response rate for those answering 'yes' to Question 66 of the population included in Scenario 2) was used to extrapolate Phase 4B Resident Interview data to other households.

Under Scenario 2, most out-migrants attend church in Smithville (38%), at St. Ann's Community Church (25%), in Wellandport (13%), or at churches elsewhere in the Niagara Region (13%).

Forty percent (40%) of out-migrants in this scenario are members of community groups or associations. Loss of out-migrants in Scenario 2 would result in an 8% drop in overall group membership. A number of groups would be affected. Church groups would experience a 10% decline in membership and a loss of 5% from their executives. Membership in social clubs would decline 3% (9% in their executives). Sports and recreation groups would lose 2% of their members.

Impacts on the Community

In Scenario 2, 32 households (125 people) will leave the local community. This accounts for about 5% of the households/residents in the local community, and 1% of those in the Township of West Lincoln. These losses would contribute further to the presently declining growth rate in West Lincoln.

Some ethnic minorities would lose members of their communities: the Greek (67%), Ukrainian (20%), and German (5%) groups would be most affected.

The farm community would lose about 5% of its members. Community stability and cohesion would be influenced by some of the factors described earlier in the discussion of impacts on individuals (i.e. length of residence, number of friends and relatives in the area, interactions with neighbours, and community group involvement).

Generally, Scenario 2 would result in some impacts on stability and cohesion in the local community, although to a lesser extent than Scenario 3.

10.4.6 SCENARIO 3[1]

Impacts on Residents

Under this scenario, 330 households (1,161 residents) would move. Almost one-half of these have lived at their current address for more than 10 years; 70% have lived in West Lincoln for more than a decade. More than 80% own their homes.

Roughly 30% live on properties that were owned by their ancestors. More than one-third had ancestors elsewhere in West Lincoln. At least 7 of these families have been in the area for more than 100 years. More than 85% of the out-migrants reported that they were 'very satisfied' with West Lincoln as a place to live. Almost 90% said they would have problems moving. The most commonly cited reasons why moving would be difficult were:

Reduction in property value	(41%)
Attached to home/area	(30%)
Can't sell/no buyer	(25%)
Family in area	(22%)
Financial reasons	(17%)

The majority (41%) have three close friends in West Lincoln: almost two-thirds have relatives in the area. Most entertain their neighbours on a weekly (35%) or daily (25%) basis. Many help their neighbours with non-farm tasks on a daily (31%) or weekly (24%) basis. Help with farm work occurs less frequently; most often monthly (22%) or weekly (17%).

Forty percent (40%) of the respondents in Scenario 3 have children attending school.

Approximately 40% of the out-migrants in this scenario are members of community groups or associations. A number of these are members of group executives. Forty-four percent (44%) attend church regularly; 27% occasionally; the rest, never.

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[1] Scenario 3 includes 'on-site', 'buy-out' and residents within the study area who said they would move.

About 11% of the residents in Scenario 3 are pre-schoolers; about 23% are aged 5 to 19; and 3% are over 65. About 28% of the residents have some high school education; thirty-two percent (32%) have a high school diploma.

Sixteen percent (16%) of the out-migrants in Scenario 3 are farmers; 22% are homemakers. One-third of the households earn less than $25,000 a year.

Impacts on Community and Recreation Features

In Scenario 3, over 60% of those surveyed said they would move outside the Regional Municipality of Niagara.

In Scenario 3, impacts might be felt by a number of school and churches. Gainsborough Central Elementary School would lose a minimum of 16 students (4% of current enrolment). This would be in addition to an anticipated 10% decline in enrolment in the absence of OWMC. If the non-interviewed households or those who did not indicate they would move are included in the estimate, the decline due to OWMC could be 94 students (22% of current enrolment).[1] An overall drop of 32% could, therefore, occur.

As a result of out-migration, South Lincoln High School would experience at minimum a drop of 2.2.% from its current enrolment; John Calvin School 2.9%; Beamsville High School, 1.1%; and Wellandport Christian School, 0.7%. Only John Calvin School and Wellandport Christian School are anticipating future growth. If non-interviewed households or those who did not indicate that they would move are included in these estimates the losses could increase by a factor of almost 6, as follows: South Lincoln High School - 12.8%; John Calvin School - 17%; Beamsville High School - 6.6%; and Wellandport Christian School - 4.1%.[2]

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[1] Information with respect to school and church attendance from the Phase 4B Resident Interviews was used to estimate school and church attendance in households only surveyed in Phase 4A (questions about school/church attendance were not asked in that survey), those not indicating they would move in the Phase 4B interview, or not interviewed at all. It was assumed that households surveyed in Phase 4B have the same characteristics as those not surveyed or who did not indicate that they would move. A factor of 5.9 (based on the Phase 4B survey response rate for those answering yes to question 66 of the population included in Scenario 3) was used to extrapolate Phase 4B Resident Interview data to other households.

[2] As above.

Under Scenario 3, most out-migrants attend church in Smithville (25%), Wellandport (14%), Lincoln (13%), Pelham (9%), or elsewhere in the Niagara Region (13%). About 11% attend St. Ann's Community Church, and 4% attend Emmanuel United. The figures are about 2% each for Bismarck United, Silverdale United and Boyle Brethren in Christ Church. The following declines in attendance can be expected at minimum: Bismarck United - 4%; Silverdale United - 11%; and Boyle Brethren in Christ - 3%. If households that were not interviewed or did not indicate they would move are included, these figures could increase by as much as a factor of 6: Bismarck United - 24%; Silverdale United - 67%; and Boyle Brethren in Christ - 18%.[1]

Forty-two percent (42%) of those surveyed are members of community groups or associations. Loss of out-migrants in Scenario 3 would result in a 27% drop in overall group membership. A number of groups would be significantly affected:

TYPE OF GROUP	DECLINE IN MEMBERSHIP	DECLINE IN EXECUTIVE
Charitable Organization[2]	100%	100%
Unstructured Volunteer[2]	67%	not applicable
School Group	40%	40%
Sports and Recreation Club	37%	40%
Social Club	30%	20%
Church Group	29%	34%
Agricultural Group	24%	50%
Service Club	26%	13%
Other Leisure Club	25%	-----

Impacts on the Community

Under Scenario 3, 330 households (1,161 residents) will leave the local community. This represents about 51% of the households and residents in the local community, and about 11% to 12% of those in the Township of West Lincoln. These losses would further compound the presently declining growth rate in West Lincoln.

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[1] See footnote 1, previous page.

[2] High impact is due to the low numbers of people in these 'groups', all or many of whom would move.

A number of ethnic minorities would experience a loss of community members: the Greek (67%), French (50%), German (48%), Italian (40%), Ukrainian (40%), and Dutch (34%) communities would be affected.

The farm community would lose about 55% of its members.

Community stability and cohesion would be affected by a number of factors described above in the discussion of impacts on individuals (i.e. length of residence, number of friends and relatives in the area, interactions with neighbours and community group involvement). In general, Scenario 3 could result in significant impacts on both stability and cohesion in the local community, and have negative effects on school and church attendance.

10.4.7 EVALUATION

Each of the three out-migration scenarios indicate that there will be implications for the stability and cohesion of the local community, to varying degrees. Should Scenario 3 occur, the repercussions for community stability and cohesion would be significant; the implications of Scenario 2 would be somewhat less significant.

From the site visits it was evident that large numbers of people do not move out or avoid a community because a hazardous waste management facility is located in the community. When households do move, they are soon replaced by other households. Many people may experience stress due to the facility and may wish it was located elsewhere, but because of their social and economic investment in the community, most people elect to stay and cope as best they can. Others experience little or no concern about the location of such facilities in their community.

The effect of individual concerns and stress are best documented in the social impact studies of the Three Mile Island area after the melt-down accident in the nuclear reactor. Although this is not a situation directly comparable to the OWMC facility, and it deals with an accidental event, it is instructive in providing insights into household behaviour. After the accident, 30% of surveyed households within a 5 mile radius considered moving (Flynn 1979). Nineteen percent of the households surveyed within

40 miles or more of the plant reported they had considered moving; twenty-two percent of those (4% of all surveyed households) definitely decided to move. A second survey undertaken six months later found that few of those who considered moving actually did so (Flynn and Chalmers 1980). It was suggested that few moved because for those who own property, or who have a spouse or children, both the financial and psychological costs of changing residence are likely to be substantial.

It was noted that the extent of continuing desire to move will be influenced by the events of the next several years. The actual decisions made regarding TMI's future operations, the extent of public participation in the decisions, the clarity with which these decisions are communicated, and the public's confidence in the decision-making bodies will affect the willingness of the area's residents to continue to live near the TMI facility.

On the basis of experience elsewhere and the constraints which may prohibit a household from moving (economic considerations, attachment to the community), it is expected that most households will remain in the local community. Those who do move (in addition to those displaced) will likely be those who are eligible for guaranteed purchase and perhaps all residents in the direct impact zone who said they would move. Thus, between 15 and 32 households (53 to 125 residents) might leave the community. This represents between 2% and 5% of the households in the local community, and 1% or less of the households in West Lincoln Township. In addition, some households elsewhere in the local community who were unsure about moving or who feel the facility poses a risk to them may leave. The extent of this type of out-migration is unknown.

Measures can be taken to minimize the potential out-migration of residents. By implementing impact management measures that maintain and enhance the attributes of the area valued by the residents, minimize the potential risks and impacts of the facility and provide the community with control over the quality of the environment, the community can remain a desirable place to live for most residents. Impact management measures to minimize the out-migration of residents and hence impacts on stability and cohesion are recommended in Chapter 12.

10.5 IN-MIGRATION

The local community could experience an in-migration of new residents. Like out-migration, new residents moving into the community could affect its stability, cohesion and character. In particular, the number and characteristics of in-migrating residents and the rate or time period over which the in-migration occurs will have implications for the community.

An estimated 27 OWMC employees and their households are expected to relocate in West Lincoln (Morehouse Economic Planning Consultants 1987); however, it is not possible to determine whether they will choose to live in the local community or elsewhere. In addition to these in-migrants, other households could move into the local community to replace those who choose to leave.

The extent to which in-migration occurs will depend upon a number of variables:

- the extent of out-migration;
- the attractiveness of the area as a place to live;
- the general public's perception of the OWMC facility;
- the steps taken by OWMC to address the impacts.

In the recent past, new residents attracted to the local community have been those seeking the rural lifestyle or lower cost of housing relative to nearby urban areas. Future in-migrants will be those associated with the OWMC facility, those unconcerned about the OWMC facility (other area attributes being more significant to them) and/or those sufficiently satisfied that appropriate measures have been taken to provide safeguards for the community. The characteristics of these in-migrants could differ from those of residents who leave; for example, their goals and values may not be the same. It is not possible to predict the characteristics of the in-migrating residents and consequently the potential impact on the community. Similarly, it is difficult to predict whether the impacts will be desirable or undesirable. If farm households are replaced by non-farm households there will likely be a loss to the farming community.[1] Households without children replacing households with children could represent a change in community composition. However, if out-migrating households were not involved in the community, and the new residents wish to become involved, the implications to the cohesiveness of the community could be positive.

The time period over which in-migration occurs will influence the degree of impact. In-migration over a period of several years and similar to that experienced by the community in the past will have less of an impact than if it takes place over a relatively short period of time. Those who do move into the area will, like those who are displaced or chose to leave, require approximately two years to adjust to their new community (Cluett et.al. 1979).

Uncertainties with respect to the nature and extent of in-migration limit an assessment of the impact on the stability, cohesion and character of the local community. Based on the assessment that out-migration will range between 15 to 32 households (Section 10.4), and the anticipated 27 new households of OWMC employees, net in-migration to the local community would be correspondingly small. Despite the limited numbers, the implications could be significant if the characteristics of the newcomers differ substantially from those of the out-migrants. However, in-migration can be monitored. Steps can be taken to minimize the disruption to the community and assist new residents to integrate into the community. By implementing impact management measures that maintain and enhance the attributes of the area which have attracted previous in-migrants and are valued by existing residents, it may be possible to attract in-migrants of similar character. However, OWMC cannot ensure that the new residents will share the same characteristics and hence some adjustment is anticipated.

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1. This issue is discussed in detail by Ecologistics Ltd. See Ecologistics Ltd. Site Assessment.Phase 4B: Agriculture. 1988.

10.6 COMMUNITY CHARACTER

The character of an area is the result of several things - dominant physical features, land uses, economic activity, and the people. The physical land use change from agriculture to industry was seen by residents as resulting in a change in character, both physically and socially.[1] In the resident survey, 17% felt that the character of the area would be affected if current residents leave.

The extent to which the character of the community around the proposed OWMC site may change will depend, in part, on how many of the current residents leave, if they are replaced and by whom.

If only a few residents leave and are replaced by others with similar social characteristics, then the social character of the community would not be affected. However, if a substantial number of residents leave and in-migrants have considerably different social characteristics, there can be effects on community character. This could result in less satisfaction with the community for remaining residents and may have further effects on community cohesion and stability.

The number of households that will leave and the characteristics of those who would move in cannot be predicted. Thus, the effects on community character cannot be projected, beyond describing how it could be affected.

10.7 CONCLUSIONS

It is apparent from the discussion above that a number of special impacts will be associated with the OWMC hazardous waste management facility. Residents have expressed a high degree of satisfaction with their community and the services it offers, and appreciate its rural character in particular. Strong social ties amongst neighbours, friends and relatives are evident; this has led to a high degree of community cohesion. Residents fear that their satisfaction with the community may be reduced if the OWMC facility is built in West Lincoln. This could in turn affect community cohesion.

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[1] Question 88.

Local residents have experienced stress as a result of both the siting process itself and it can be expected that residents will experience stress if the facility is built. Evidence of stress from the siting process has been observed. Resident stress relates to a number of factors, including the perception of risk, lack of control over the situation, and the perceived lack of credibility of OWMC, decisions-makers and regulators. Members of the community feel uncertainty with respect to their future.

The three out-migration scenarios developed on the basis of resident interviews and agency contacts provide alternatives with respect to the potential degree of impact that may be experienced in and by the community. It is anticipated that the out-migration experienced could range between that indicated for Scenarios 1 and 2, with additional movement of some residents elsewhere in the community. The nature and extent of in-migration of households to replace those who leave will also influence the impacts experienced. It is apparent that the impact management strategies OWMC chooses to implement to deal with stress, community satisfaction, stability, cohesion and character and public perceptions and concerns will go a long way to determining the extent of the special impacts. The impact management measures that could minimize the extent of the special impacts are recommended in Chapter 12.

CHAPTER 11

PUBLIC PERCEPTIONS, ISSUES AND CONCERNS

11.1 INTRODUCTION

If people perceive a problem to be real, it will be real in its consequences. This means that unless public perceptions are taken explicitly into account , decision-making will be based on inaccurate information, and the impacts of developments will not be properly understood, predicted or mitigated (Freudenburg 1987).

As noted in Chapter 10, social impacts depend not only on the effects of an undertaking, but also on the residents' perceptions of and attitudes towards it. In addition to the direct effects of the proposed facility, the actions that residents choose to take in response to both the direct effects and those which they perceive as potentially occurring will affect whether or not the community is disrupted. If residents believe there will be a meaningful change in (or threat to) their quality of life, and act on their perceptions, the consequences could be significant for them and the community as a whole.

Many residents are fearful of the consequences of the development of OWMC's proposed facility in their community. This social impact assessment is concerned with the behavioural response of residents based upon their concerns and perceptions and the impacts that could occur as a result of their actions.

Whether and how residents respond depends not only on their concerns and perceptions, but on the responses taken by OWMC to address their concerns. If residents feel they have been treated unfairly and that their concerns have not been considered, they will view the impacts of the facility as significant and respond accordingly. By acknowledging the public's concerns and addressing them in appropriate ways, the opportunity exists for OWMC to enhance the social acceptability of the facility and to minimize the social impacts.

This chapter documents the concerns and perceptions of the residents and community.

The concerns and perceptions were identified through the community input activities[1] undertaken for the social impact assessment, and the media. Various issues and concerns have been noted previously in Table 8.1; in the following discussion, they have been grouped into two broad categories:

- issues and concerns relating to the siting process
    - information
    - the public consultation process
    - perceptions of the siting process
- issues and concerns regarding the facility itself
    - social impacts: displacement; disruption due to nuisance impacts; changes in community character, satisfaction, stability and cohesion; stress; access route impacts
    - environmental contamination
    - agricultural impacts
    - economic impacts
    - safety of children
    - emergency preparedness
    - technology
    - site operation and management
    - monitoring
    - trust
    - social equity

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[1] Community input was provided by the Phase 4B Resident Interviews, the Phase 4B Access Route Drop-off Survey, Community Leader and Kitchen Table Meetings, One-on-One Interviews and OWMC's Public Consultation Program. See Chapter 4 for more detail.

The first category deals with issues and concerns related to the siting process itself-the information provided to the public, public consultation, and community perceptions of the nature and length of the process.

The second category deals with issues and concerns related to social impacts, the risks and impacts that are the focus of other Phase 4B studies, and issues and concerns which have been raised by the public. Public perceptions and concerns about social impacts (displacement; disruption due to nuisance impacts; changes in community character, satisfaction, stability,[1] and cohesion;[1] stress; and access route impacts) have been discussed previously in Chapter 9 and 10; a summary of these concerns is provided below in Section 11.3.1.

Residents have raised issues and expressed concern about risks and impacts that are related to studies done by other consultants. These include environmental contamination, agricultural impacts and economic impacts.[2] Other issues and concerns that are not the direct responsibility of any particular OWMC consultant relate to emergency preparedness, appropriate technology, site operation and management, monitoring, trust in OWMC and other parties and the social equity of imposing this facility on the West Lincoln community. However, these issues are being addressed by OWMC. Where possible in the discussion of specific issues and concerns, experiences at other similar facilities are noted.

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1. Residents did not directly express perceptions or concerns with respect to community stability and cohesion, but did indicate concerns that would have implications for these two factors.
2. These studies are documented in the following reports: Ecologistics Ltd. 1988; Environ Corp. 1988; Gartner Lee Associates 1987; M.M. Dillon Ltd. 1987; and Morehouse Economic Planning Consultants 1987.

11.2 ISSUES RELATING TO THE SITING PROCESS[1]

11.2.1 INTRODUCTION

The siting process itself can create social impacts and influence perceptions of OWMC, the acceptability of the proposed facility and future relations with OWMC. For example, if the community distrusts the siting process, the proposed facility could be less acceptable. This section documents residents' assessments of information provided by OWMC and the public consultation process and their perceptions of the siting process and opportunities for individuals to influence the final decision.

11.2.2 INFORMATION

Residents provided comments concerning information from OWMC in the Phase 4B Resident Interviews. Fifty-seven percent (136 respondents) reported receiving information directly from OWMC.[2] Of these, 58% (82 respondents) found it helped them understand the facility.[3] One-half of the respondents (71) noted that the information helped them understand the site selection rationale; 36% (52 respondents) reported that it did not. Reasons given as to why the information was not useful included:

- site selection criteria were unclear (31%; 18 respondents);
- the information was difficult to understand (27% or 16 respondents);
- information was not informative (20% of 13 respondents); and
- a general distrust in OWMC and the information provided (17%; 10 respondents).

Residents suggested a need for both general information that is easier to understand, as well as information on specific issues such as compensation and safety.

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[1] Where responses to questions from the resident interviews and access route drop-off survey are reported in this section and those that follow, the relevant question number(s) is(are) noted. Unless otherwise specified, the questions are from the Phase 4B Resident Interview Form, provided in Appendix D. Number of respondents and percentages are calculated relative to those answering a particular question, rather than overall number of survey respondents.

[2] Question 94.

[3] Question 95.

Similar comments were provided through the public consultation process. Residents suggested a need for less technical information. Some indicated they had not received responses to their letters or phone calls, and some of those who had, felt the answers were not clear. Residents expressed skepticism in the information they were provided (for example, that air emission control equipment would be 99.9% effective) and wondered whether they were being provided with all information. Educational programs were identified as an informational need.

11.2.3 THE PUBLIC CONSULTATION PROCESS

Those interviewed generally felt they had sufficient opportunities to discuss the proposed facility with OWMC officials (56%; 129 respondents), and other residents (86%; 199 respondents).[1] They did not agree that they had had enough opportunity to discuss the proposal with municipal politicians (45%; 102 respondents).

Comments provided through the public consultation process suggest that residents are skeptical that public consultation would have any effect. However, other residents requested additional meetings, suggesting the meetings served some useful purpose in their view and noted that the program had led to heightened public awareness and permitted the public to make more informed decisions.

11.2.4 PERCEPTIONS OF THE SITING PROCESS

Generally, there is a feeling of discontentment with the OWMC facility siting process. The reasons given include uncertainty about the future, a distrust of OWMC and a desire for the facility to be located elsewhere. Other concerns included the length of the siting process (too long) and the need for additional information (for example, on intervenor funding). Interest was also expressed in greater public involvement in the process.

A majority of survey respondents felt that they and their community would be unable to influence the final decision (52%; 122 respondents).[2] Some believe that the decision has already been made (43%; 51 respondents), or would be political (39%; 46 respondents), or that the municipality would have little political clout (18%; 21 respondents) because West Lincoln is a rural community with a small population.

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[1] Question 80.

[2] Question 81.

Similar perceptions of the siting process were conveyed during the public consultation activities. A general feeling of helplessness or lack of control was evident. Residents also cited concern that the process was too lengthy. Questions were also raised regarding the environmental assessment process and site selection criteria.

11.3 ISSUES AND CONCERNS REGARDING THE PROPOSED FACILITY

11.3.1 SOCIAL IMPACTS

Residents concerns and perceptions regarding social impacts have been documented in Chapters 9 and 10. They include:

- displacement
- disruption due to nuisance impacts
- changes in community character, satisfaction, stability and cohesion
- stress
- access route impacts

Concerns about these impacts are summarized below.

Residents are primarily concerned that displaced households be treated fairly. Fair treatment is considered to include covering all costs associated with moving, along with compensation for the inconvenience and stress associated with an unwanted move. Residents who would be displaced raised concerns about leaving friends and relatives behind (i.e. they foresee difficulties in leaving because of their attachments to, and in, the community) and finding comparable accommodation at a similar price.

Concerns were expressed regarding nuisance impacts, although less frequently than those relating to health and safety. Residents did not directly offer concerns that their use and enjoyment of property and daily activities would be affected but, when asked in the resident interviews, a number of residents anticipated changes in activities or lifestyle because of nuisance impacts.[1] Residents were concerned that the proposed facility would alter the character of the area,[1] specifically the attributes they value in the area (such as peace and quiet) and affect their satisfaction with the community as a place to live.[2] Many of the residents perceive nuisance impacts as contributing to these changes. Residents did not directly express perceptions or concerns with respect to community cohesion and stability, but did indicate concerns that would have implications for these two factors.

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[1] Question 85.

Stress results primarily from residents' concerns for health and safety. Many feel that they have no way of avoiding being affected by the facility and would not be able to move out of the community. There has been considerable stress created in the community just from the expectation of what might be built and how it might operate. Besides concerns for health and safety, there is concern about decreased property value and change of community character and a feeling of hopelessness in dealing with big government. The residents believe that they will have little to say about the siting of this facility. Many see it as being forced on them when they don't want it, they question the need for it, and their sense of fairness is offended by putting the waste from industry in a rural community.

Concerns expressed by residents along the access route were primarily related to safety and health: traffic accidents due to increased truck traffic, accidents involving spills, leaks from waste-carrying trucks, and the potential risks to residents using the road.[3] Residents noted concerns regarding the safety of school children, conflicts with school buses and farm machinery and the level of resources available along the access route to deal with any emergencies that arise. Other concerns related to a decrease in property values, reduced accessibility due to the additional traffic and nuisances such as noise, odour and dust.

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[1] Question 51.

[2] Question 62.

[3] Questions 2 and 3, Access Route Drop-off Survey, Appendix D.

11.3.2 ENVIRONMENTAL CONTAMINATION

Concerns related to environmental contamination can be divided into those related to health, and those related more generally to environmental quality. Residents are worried about both pollution from the facility itself and from trucks travelling along the access route.

Environmental Quality[1]

Concerns about environmental quality were mentioned by almost half (47%) of the respondents to the Phase 4B Resident Interviews who stated that they had concerns about the proposed OWMC facility.[2] A similar proportion (at least 43%) of access route survey respondents expressed similar concerns.[3] When asked an open-ended question on the characteristics they liked about the area, 57 respondents (25%) cited 'clean air/environment';[4] 218 (90%) did so when offered a list of characteristics.[5]

Many respondents (219 or 90%) believe there is a potential for ground and surface water contamination associated with the OWMC facility.[6] Eighty-eight percent (212 respondents) feel there is a risk of contamination of crops and livestock.[7] When asked if they believed their household would be affected by air and water pollution from the facility, the majority (206 or 88%) responded 'yes'.[8] As for how this would affect their household, the most frequently mentioned responses included finding an alternative water source or purification of existing water supplies, moving from the area, and reduction of outdoor activity.

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[1] Comments made regarding air, water and soil quality, are considered as concerns about 'environmental quality'.
[2] Question 51b.
[3] Question 8, Access Route Drop-off Survey , Appendix D.
[4] Question 58.
[5] Question 59.
[6] Question 84d.
[7] Question 84e.
[8] Question 85 (a)(g).

Residents along the access route are concerned that air pollution from OWMC activities will affect their use of the roadway for walking, cycling and waiting for the school bus.[1]

Over the course of the public consultation process, concerns about impacts on water and air quality, environmental damage and ecosystem effects were stated often.

Experience at Existing Facilities

Residents living near several hazardous waste management facilities visited by IER's staff noted affects on the environment and on air and water quality. At the Rollins facility in Baton Rouge several community residents noted that there were odours from the facility that at times made them feel ill. Adjacent farmers indicated that run-off had polluted the water supply used by their cattle and that cattle had died.

At the Tricil facility in Sarnia, residents mentioned that there was a noticeable odour from the incinerator stack. However, they also noted that with the introduction of new technology at the Tricil facility, the odours have decreased considerably. They also raised concerns about possible effects on the groundwater supply but did not have any clear evidence that there was an effect. Surface water contamination off-site was claimed to have occurred on at least one occasion.

At the Stablex facility in Blainville, Quebec, there were no references to effects on the environment and the facility appeared to be well-maintained and well-run.

Impacts on Health

While concerns about human health are clearly related to environmental quality, many residents did mention them specifically.

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[1] Question 3, Access Route Drop-off Survey, Appendix D.

When residents were asked about concerns they have if the facility is built, 'air pollution' was the most commonly mentioned (at least 100 respondents or 47%).[1] General dangers to health were mentioned by 60 respondents (28%); long-term health effects worried 37 (18%) of them.

People believe some of their activities, such as skiing, hunting, BBQ's, children's activities, outdoor relaxation and leisure would be affected by pollution. As stated above, a quarter of those interviewed cited clean air/environment as one of the three most important characteristics they liked about the area.[2] When shown a list of characteristics, 90% (218 respondents) mentioned that 'clean air' was an attribute they liked about their community.[3] About a quarter of those surveyed believe their satisfaction with the community will be affected by air and water pollution from the facility (45 respondents). [4] Twenty percent (37 respondents) would be less satisfied because of general health dangers, 15 (8%) because of long-term health effects.

Eighty-two percent of survey respondents (197) agreed[5] with the statement 'There is a risk to the health of residents living near the site'; 10% (24 respondents) did not know.[6] Almost 90% of respondents (206 or 88%) believed they would be affected by air and water pollution; as a result, residents stated that they would seek alternative water supplies, reduce outdoor activities, install air conditioning, or possibly leave the community.[7] Other responses were noted less frequently.

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1. Question 51b.
2. Question 58.
3. Question 59.
4. Question 62b.
5. These respondents either 'agreed' or 'strongly agreed' with the statement.
6. Question 84b.
7. Question 85.

Over the course of the public consultation, concerns about air emissions in general and their effect on health in particular were frequently mentioned. Reference was made to cancer, respiratory ailments and the health of future generations. One resident commented that people would be torn between staying in the community and fear for their health. There was skepticism as to the type and amount of emissions that will come from the plant. Some residents feel that the risk to health will be greater in the Pelham area than in the vicinity of the facility, the area being downwind of the facility, in the predominant wind direction.

Experience at Existing Facilities

The site visits uncovered considerable concern about long-term health effects from waste management facilities. At the Rollins facility in Deer Park, Texas, individuals with whom IER staff met, including a newspaper reporter and a public health nurse, indicated that there was some concern in the community about the health effects from the facility particularly as a result of burning PCB's. The one health study that was undertaken in response to a skin rash outbreak found that the cause was a pesticide company located near the Rollins incinerator. It was noted by the public health nurse that it was very difficult to pinpoint the Rollins facility with respect to any health concerns because it is located in the midst of a very large petrochemical industrial area.

The Texas Air Quality Control Board has found the air quality in the Houston area (including Deer Park) to be improving as a result of new and more stringent regulations. No direct cause and effect between health impacts and the facility have been documented by the Air Quality Control Board.

The residents in the vicinity of the Rollins facility in Baton Rouge raised numerous examples of health effects (such as respiratory problems) resulting from the odour and emissions at the Rollins facility. The Mayor of Baker, Louisiana, which is some five miles from the Rollins facility, noted that on occasion people in his municipality complain about being affected by odours from the facility and therefore have concerns for longer-term health impacts. A recent class action court case related to the operation of this facility resulted in substantial cash payments to residents within one mile of the facility. The cash payments were compensation for decreased quality of life, nuisance and health effects from the facility.

There were no health effects noted in discussion with community representatives at Blainville, Quebec. Concerns about health were noted in the area of the Tricil facility in Sarnia but there was no evidence to indicate any health effects.

During the European site visit, a discussion was held with the medical officer of health in the community of Kumla in Sweden, which is the nearest municipality to the Sakab facility. He indicated that he has found no cause and effect relationship between health and the operation of the waste facility. He had developed a health monitoring program and was intending to continue with his research activity.

11.3.3 AGRICULTURAL IMPACTS[1]

The potential impacts on agriculture from the OWMC facility can be discussed in terms of four factors:

- effects on actual farm operations;
- economic impacts;
- loss of agricultural land base;
- change in the agricultural character of the area.

Effects on Farm Operations

Potential impacts on agricultural operations as a result of contamination or reduced productivity of land, crops or livestock were mentioned regularly throughout the public consultation process. Concerns about these types of impact were also reflected in the Phase 4B Resident Interviews.

Residents were asked an open-ended question regarding their concerns with the OWMC facility.[2] Possible impact on the quality of crops was mentioned by 50 respondents (24%); problems with livestock or milk was a concern for 31 (15%) of those interviewed; overall reduction in agricultural land or productivity was mentioned by 29 respondents (14%). These same concerns were mentioned, although less frequently, in other questions as well. When asked specifically about particular potential impacts, almost all respondents (88%) agreed that 'there is a risk of contamination of crops and livestock'.[1] Twenty-nine farm respondents indicated that they had put plans to improve their property 'on hold' as a result of the OWMC announcement.[2]

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[1] Ecologistics Ltd. has done detailed studies of the agricultural impacts of the OWMC facility; these are documented in Ecologistics Ltd. Site Assessment, Phase 4B: Agriculture. 1988.

[2] Question 51.

Over the course of the public consultation process, a number of other concerns were noted:

- possible increases in salt damage to tender fruits grown along the access road;
- drainage impacts;
- effects on greenhouse operations, gardens, woodlots, and landscaping;
- worry that OWMC might impose mandatory crop controls to avoid toxic effects on more sensitive crops;
- if crop yields decrease, farmers will see a decline in crop insurance coverage;
- some residents feel that the land at LF9C may be more productive than indicated by its present state;
- what arrangements would be made for the care of livestock in the event of an evacuation;
- farm residents would experience relatively more difficulty moving than others who do not farm.

Experience at Existing Facilities

Farmers in the vicinity of the Tricil facility in Sarnia indicated a concern about the long-term effects of air emissions and possible groundwater contamination on their crops and livestock. Some claimed there was damage to crops and trees but had no proof that it was linked to the Tricil facility.

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[1] Question 84e.

[2] Question 54a.

It should also be noted that Tricil is located in the Sarnia petrochemical industrial area and so it is difficult to isolate cause and effect relationships.

Claims have been made of cattle dying as a result of contact with run-off from ponds at the Rollins facility in Baton Rouge. These claims have been settled as a result of court action. Similarly, farmers near the Chem Security facility in Arlington, Oregon have claimed losses to livestock and vegetation as a result of emissions.

Economic Impacts

A primary economic impact on agriculture related to the OWMC facility could result from the reduced marketability of local agricultural products. This could result from either a real or perceived change in the quality of these products. Concerns about this type of effect were expressed many times during the public consultation process. Asked in an open-ended question in the Phase 4B Resident Interviews if they had any concerns about the OWMC facility being built, 9 of those interviewed (4%) indicated that farmers wouldn't be able to sell crops, livestock or milk if the OWMC facility is built.[1] Sixty-five percent (65%) disagreed with the statement "People will buy crops grown around the site".[2]

One resident mentioned that he was encouraging other farmers to appeal their tax assessments. Another suggested that farmers in the area are already experiencing a loss of equity, and may have problems obtaining bank loans as a result. Loss of property value was a concern for both farm and non-farm residents (see Section 11.3.4, 'Economic Impacts'). Other residents are concerned about the possible loss of jobs in the agricultural sector because of OWMC.

Experience at Existing Facilities

A stock farmer living adjacent to the Rollins facility in Baton Rouge indicated that he has had no problems with a 'stigma effect' when it came to marketing his cattle. He markets hundreds of head of cattle monthly in the surrounding region and neighbouring states. Discussions with farmers in the vicinity of the Tricil facility in Sarnia indicated that there has not been any negative consumer reaction to locally produced food products.

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[1] Question 51b.

[2] Question 84(a)(i).

A short-term decline in the sale of dairy products from the Three Mile Island area was noted immediately after the accident at the nuclear power plant. It is not known to what extent this decline was due to customer reluctance or the fact that numerous people had evacuated from the area. However, sales recovered within two weeks (Flynn and Chalmers 1980).

Loss of the Agricultural Land Base

Concern about a reduction in agricultural land or productivity was mentioned in response to an open-ended question by 14% of those interviewed (29 respondents).[1] Over the course of the public consultation process, reservations were often expressed about the wisdom of siting the facility on agricultural land.

As mentioned earlier, a number of farmers stated that they have been putting plans for expansion or improvement on hold as a result of the OWMC proposal. During the public consultation process, concern was expressed that if, in fact, these or other farmers should decide to leave farming and are not replaced by other farmers, it could result in a loss for the provincial agricultural base. It is the view of some residents that the facility could, therefore, have repercussions for all of Ontario.

Change in the Agricultural Character of the Community

It is evident from both the interviews and the public consultation process that the rural-agricultural character of the local area is valued by residents. When asked in an open-ended question what were the three most important characteristics they liked about the area (prior to OWMC's announcement of the preferred site), 16 respondents

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[1] Question 51.

(7%) stated the 'absence of industrial development'.[1] When given the option of choosing characteristics they liked about the area, 207 respondents (86%) indicated 'absence of industrial development'.[2] When asked if they had any final comments, a number of residents stated that they felt the character of the area would be affected (16 respondents; 9%).[3] Sixteen respondents (8%) cited concern about increased urbanization and industrialization in the area as one of their general concerns about the facility in an open-ended question.[4]

During consultations with the public, a number of residents indicated that they believed the OWMC facility should not be built in a rural, agricultural area. Again, it was not always directly stated why this was so, but it can be assumed that a negative change in community character would be a contributing factor. Residents were also concerned that other industry would follow OWMC into the area and would change the nature of the community. There was a general feeling that the proposal would reflect negatively on the image of the entire area. In particular, the area around the site would change quickly, for instance if dairy farmers leave and are not replaced.

11.3.4 ECONOMIC IMPACTS[5]

Economic concerns can be divided into three categories: changes in property value; impact on tax revenues; and effects on jobs and businesses. Overall, economic concerns were cited by at least 33% (69 respondents) of those interviewed.[6]

Property Value

In an open-ended question about residents' general concerns with the facility, one-third of those interviewed (69 respondents) mentioned loss of property value.[7] The vast majority (206 respondents, 89%), when asked whether their property value would be affected if the facility is built, stated that they thought it would.[8] Of these, 192

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1. Question 58.
2. Question 59.
3. Question 108.
4. Question 51b.
5. Morehouse Economic Planning Consultants has done detailed studies of the economic impacts of the OWMC facility; these are documented in Morehouse Economic Planning Consultants Phase 4B, Site Assessment: Economic Impact. 1987.
6. Question 51.
7. Question 51.
8. Question 86.

respondents (94%) felt the effect would be negative (i.e., property values would decrease). They believe the change in property value would result in a loss of equity for them (142 respondents, 64%), trouble selling (17%), or an inability to move because of financial losses (10%).[1] Ten percent (22 respondents) did not think a change in property value would affect them.

A number of residents (14) who have postponed improvements to their property said they did so because no one would want to buy their property; they could not sell at market value; or they would experience a loss of equity.[2] A small number (6 respondents, 10%) believe that being able to see the facility would have an effect on their property values.[3] It can be assumed, although not directly indicated by interview results, that residents feel that safety and risk factors will have a greater influence on property values in the area. Concerns about negative effects on property value were evident throughout the public consultation process; some people felt these effects were already occurring.

Experience at Existing Facilities

At the Tricil facility in Sarnia, Ontario, property value impacts have been observed adjacent to the site, and are contained within a half mile. Property values were depressed near a radioactive waste site in West Chicago (Payne et al. 1985). After the Three Mile Island (TMI) incident, property values declined somewhat, but returned to near-normal 48 weeks later (Gamble and Downing 1981). Over the short-term at TMI, the number of homes sold dropped (Gamble and Downing 1982) and those which were sold took longer to sell (Flynn & Chalmers 1980, Payne et al 1984). However, land values near the Stablex facility in Quebec have more than doubled since 1986. Similarly, a study found that property values were not affected by distance from, or visibility of, nuclear power plants (Gamble et al. 1979).

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[1] Question 87.

[2] Question 56b.

[3] Quetion 85(b)(f).

Tax Revenues

Fifty-six percent of those interviewed (132 respondents) believe the OWMC facility will contribute additional tax revenues to the municipality.[1] Of these, only 62% (77 respondents) believe these revenues would be beneficial (for instance, by reducing residential taxes). Others (12% or 8 respondents) feel that municipal expenses related to the OWMC facility would exceed tax income. Comments regarding tax revenues and related matters were also made during public consultation.

Experience at Existing Facilities

In Blainville, Quebec, the Stablex facility contributes twice the assessment rate paid by community residents. This has resulted in a decline in property taxes. The Chem Waste Management Inc. facility in Emelle, Alabama provides one-half of the revenues for Sumar County.

Jobs and Business

Fifty-one percent of those interviewed believed that new jobs would be created (120 respondents).[2] Of these, 71 respondents (62%) felt this would be beneficial. Twenty-nine respondents (33%) felt that few jobs would be created; a similar number (28 respondents; 32%) felt that the jobs would be highly skilled and that local residents would not be qualified for them.

In an open-ended question about residents' general concern with the proposed facility, a small number of respondents cited other worries related to jobs and business. These included possible negative effects on the local economy (4 respondents), and loss of business (6 respondents, 3%).[3]

A number of respondents (44 or 19%) claimed that they would go elsewhere for services such as shopping if the OWMC facility is built.[4] Almost three-quarters of those answering the business survey addendum of the access route survey believed their business would be affected by OWMC-related truck traffic (13 respondents, 72%).[5]

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1. Question 88c.
2. Question 88b.
3. Question 51.
4. Question 76.
5. Question 3a, Access Route Drop-off Survey Addendum - Business Survey, Appendix D.

Experience at Existing Facilities

At some of the hazardous waste management facilities contacted,[1] comments about the positive economic impacts of the facilities were made. Often, the operation is a major employer in the area. Residents seem to become accustomed to the presence of the facility over time. The Chem Waste Management Inc. facility in Emelle, Alabama contributes more than $23 million to the state economy, and is the largest employer in the area. SCA Chemical Services in Chicago installed some services and utilities when the plant was built; these are now used by other industries. In Blainville, Quebec the Stablex operation is seen as a catalyst for economic growth in the area.

11.3.5 SAFETY OF CHILDREN

Concerns regarding the safety of children relate to both those children living and attending school in the vicinity of the facility itself, and those living, attending school, and being bussed along the access route.

General safety issues (not specifically relating to children) were the fourth most frequently mentioned type of concern for those responding to an open-ended question about residents' general concern with the proposed facility (at least 44 respondents, 21%).[2] When asked in an open-ended question to identify the three most important characteristics liked about their community, 20 respondents (9%) stated 'good place to raise children', 7 (3%) mentioned 'safety'.[3] When provided with a list of characteristics and asked the same question, these two responses were given by 204 (84%) and 180 (74%) respondents, respectively.[4]

Forty percent of those interviewed (95 of 176 respondents) believe that children's activities will be affected by the facility.[5] Of these, 19 respondents said these activities would be curtailed; 11 said they would not let their children play outside; 14 stated that they would worry about their children's activities because of OWMC's operations.

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[1] The existing hazardous waste management facilities are identified in Appendix C.

[2] Question 51.

[3] Question 58.

[4] Question 59.

[5] Question 52b.

Approximately 90% of access route survey respondents expressed concern over the current safety of cyclists and pedestrians, and conflict between school buses and other traffic.[1] Even more (90%-94%) expressed these concerns with regard to added OWMC traffic.[2] More than 50% of those households surveyed along the access route use the roadway for walking, or bicycle riding; 32% of surveyed households use the road to wait for the school bus; most of these people feel that these activities would be affected by truck traffic from the OWMC facility.[3] Most of the individuals believing the activity would be affected had concerns about risk and safety-related to the increased truck traffic.

During the public consultation process, children's safety (in terms of both the risk of transportation accidents and risk to health from pollution) was a frequently cited concern for local residents and representatives of community and recreation features. People expressed concerned about the lack of evacuation procedures for the schools along the access route and in the vicinity of the plant. Some residents said that they had, or were considering, sending their children to school elsewhere.

Experience at Existing Facilities

There was some concern expressed by residents with respect to safety and the need for evacuation procedures in the event of an accident. There was particular concern at Baton Rouge, Louisiana, where there are examples of church services being disrupted and people evacuated as a result of odour. A daycare and junior elementary school facility are located approximately half a mile from the facility; there have been concerns about the potential effects on the children and the need to have sufficient warning in order to either evacuate or shelter them in the case of an emergency. Such an emergency procedure was not in place due to an apparent shortage of funds.

At all of the other facilities visited by IER staff there appears to be sufficient confidence in the operators of the facility and the municipal emergency response personnel to handle problems and to provide sufficient warning if people needed to be evacuated.

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[1] Question 1, Access Route Drop-off Survey, Appendix D. Not related specifically to children.

[2] Question 2, Access Route Drop-off Survey, Appendix D. Again, these activities are not related particularly to children.

[3] Question 3, Access Route Drop-off Survey, Appendix D.

In Sarnia, the chemical producers in the area have developed a Community Awareness and Emergency Response program (CAER) which provides information to area residents on the operation of various facilities and steps that might need to be taken in the event of an emergency. The Sarnia program is based on a similar program which is in effect at the Deer Park facility in Houston, Texas.

11.3.6 EMERGENCY PREPAREDNESS

The need for adequate and appropriate emergency response capability was noted regularly throughout the public consultation process. While residents generally rate existing emergency response services in the West Lincoln community as adequate to very good,[1] 78% (180 out of 232 respondents) felt it would be very important to improve the local fire protection and emergency services if the proposed facility is built.[2] Residents perceive their community as lacking the resources to deal with emergencies involving hazardous waste (the local fire departments in West Lincoln Township and Vineland are volunteer). Concern extends to emergencies occurring during transport of the waste to the site as well as on-site. A similar importance was placed on emergency response by residents living along the access route; 92% of those responding to the access route survey (124 out of 135 respondents) indicated that emergency response to spills was a very important concern.[3]

Over the course of the public consultation process concerns about emergency response were mentioned regularly. Specifically:

- concerns about responsibility for emergency response and the associated implications. Would OWMC be responsible or the local municipalities?
- concerns regarding the ability of local fire departments to respond to emergencies associated with the facility.

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[1] Question 61. The following percentage of respondents rated these emergency services as adequate to very good:
78% - police protection
66% - fire protection
84% - medical and health services

[2] Question 90g.

[3] Question 2, Access Route Drop-off Survey, Appendix D.

- concern about response time, particularly if the responsibility rested with an in-house emergency response team located at the OWMC site. Residents perceive a quick response as crucial in order to minimize the severity of an emergency. They were particularly concerned that the response time would be great for some areas along the access route (such as in Vineland).

- concern regarding the additional costs required to upgrade municipal emergency response capabilities. Who would assume these costs?

- concern regarding the need for coordination of resources among the municipalities.

- concern about evacuation. What type of evacuation and emergency response procedures would be provided for special groups such as school children and the elderly? What type of arrangements would be made for farmers in the event of evacuation to allow care of livestock?

- concern about the area of danger or area requiring evacuation if a spill or accident involving hazardous wastes occurs.

Experience at Existing Facilities

A variety of approaches have been taken at existing hazardous waste management facilities to deal with emergency response. At the Tricil facility in Sarnia, staff are trained in spill clean-up and are often called upon by the Ministry of the Environment to assist with off-site spills unrelated to Tricil's operations.

The Rollins facilities in Baton Rouge and Deer Park provide their own fire protection and have back-up mutual protection arrangements with the municipalities. The volunteer fire department in the Town of Baker, near the Baton Rouge Rollins facility, operates an emergency rescue service.

The Stablex facility in Blainville, Quebec maintains an emergency measures department. Blainville's local firefighters receive special training for handling chemical spills.

In Sarnia, representatives from industry, the municipality, and other relevant groups have established a Chemical Valley Emergency Coordinating Organization (CVECO). Its task is to develop and maintain community awareness (i.e., through the Community

Awareness and Emergency Response Program), emergency response plans, and mutual aid agreements. It also coordinates regular response exercises and provides some equipment for emergency response.

11.3.7 TECHNOLOGY

This section focusses on the two areas of public concern regarding the proposed technology.

- the safety of the proposed technology;
- whether the proposed facility will provide the best approach to address Ontario's hazardous waste problem.

Concern About the Safety of Proposed Technology

Residents are skeptical that the proposed facility will function in a safe and effective manner. When asked in the resident interviews whether they believed the proposed technology can safely dispose of hazardous waste, a majority of the respondents (59% or 143 respondents) indicated that they did not believe it would.[1] With regard to the reasons given for their response, 25% noted that the risks and effects associated with the technology would be difficult to assess and 21% felt the technology was unproven. A further 12% indicated that they don't trust the proposed technology and another 12% don't trust OWMC. Ten percent commented human error would reduce the technology's safe disposal of the waste; another ten percent (10%) believe that not all waste will be processed.

Similar assessments of the proposed technology were made in other interview questions; 15% (27 respondents) reported that their concerns about the safety of the facility and methods used in facility operations would affect their satisfaction with West Lincoln as a place to live.[2] Underlying this concern is the belief that while the technology may be safe and effective in theory, as indicated by the experts, in practice the results may be very different. Equipment can malfunction and may not adequately deal with new chemicals or unknown chemicals. There are abundant experiences where technologies have failed to live up to expectations as predicted by experts, the consequences of which can be frequently heard or read about in the media. Enough of these experiences have occurred close to home for the West Lincoln residents, within the Niagara Region and nearby New York State. The residents point to facilities similar to the proposed facility (such as in Beibesheim, Germany) where it is claimed technological problems have been encountered. What would prevent similar problems from occurring at the West Lincoln site?

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[1] Question 84f.

[2] Question 62b.

Residents are also aware of incidences where "new" chemical compounds have been discovered (for example, dioxin), which, because they were unknown, were not properly treated. Recent events such as those in Bhopal, India and Chernobyl, U.S.S.R., have heightened public awareness of the hazards associated with technology and the handling of chemicals. From the media one would conclude that technology seldom works as planned; it is thus not surprising that the residents view the proposed facility with skepticism.

Concerns Regarding Facility as the Best Alternative

Residents questioned the proposed facility as the best alternative to deal with Ontario's hazardous waste problem. When given a final opportunity to comment openly on OWMC's proposal, 16% of the respondents to the resident interviews noted a need for more research and a better technology (30 respondents). [1] Another 14% of respondents (25 out of 183 respondents) believed that better or alternative solutions are available and should be implemented instead. A similar proportion of residents returning access route surveys (15% or 14 respondents) felt that a different or better technology is needed. [2]

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[1] Question 108.

[2] Question 8, Access Route Drop-off Survey, Appendix D.

Rather than develop a large, centralized facility to treat and dispose of hazardous waste, residents suggested other alternatives:

- greater emphasis should be placed on the 4R's - reduction, recovery, recycling and re-use.
- waste should be treated at the source; the treatment of hazardous waste should be considered an integral part of the industrial production process.

Underlying these suggestions is the contention that the waste generators should be responsible for dealing with the problem and should be directly involved. When asked if they had any other comments at the end of the interview, 16% (30 respondents) of interviewed residents felt that waste generators should bear the responsibility for dealing with the hazardous waste.[1]

Residents felt that emphasis on the proposed technology would lead to a curtailment of research and development into alternative methods. Residents believed that the development of the proposed facility would permit industry to sherk its responsibility and role in addressing the problem. It would be difficult, for example, to encourage industry to develop and adopt alternative methods, or new technologies, if a ready and available means of treatment and disposal were available at the proposed facility. They felt there would be little incentive for research, development and implementation of alternatives.

Linked with this concern was the fear that other opportunities and technologies would be discouraged to ensure the economic and operating viability of the proposed facility.

Support was indicated for alternative technologies such as plasma arc pyrolysis. A substantial amount of media attention has been focussed on the plasma arc technology as a result of talks given by a proponent of this new technology. The community has the impression that plasma arc is comparable to OWMC's proposed technology. Armed with this information the community was left with what it felt was a plausible and acceptable alternative to the development of a large, central facility with potential risks and impacts that are of great concern.

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[1] Question 108.

Preferences for variations on the proposed technology were cited by some residents. It was suggested that a number of smaller, decentralized facilities would be preferable. Although not directly stated, it is implied that impacts would be shared among several communities, would be less significant and in particular, the distance to transport wastes, and hence the associated risks, would be reduced.

A preference for above-ground storage of treated wastes as an alternative to landfilling was noted by some. Above-ground storage was thought to permit storage of more difficult wastes until new technologies are developed; in addition, monitoring would be easier.

In summary, residents would like to see further research into the technology process to provide proof that it would be safe for them, the environment and the community as a whole. The fact that residents have stated a desire for using alternative methods suggests that they are not convinced as to the safety of the proposed technology.

11.3.8 SITE OPERATION AND MANAGEMENT

Related to the concerns about the safety and effectiveness of the proposed technology are concerns regarding the operation and management of the facility.

In response to an open-ended question about their general concerns about the proposed facility, 21% of the interview respondents (44 respondents) cited concerns about the safety of the facility and methods of operation.[1]

There is a lack of confidence in those who will operate and manage the facility and a belief that they cannot be counted on to act in the best interests of the residents and the community. Fifty-seven percent of the residents participating in the resident interviews believe 'the operators of the facility cannot be relied upon to safely operate it' (136 respondents).[2] Another 20% (48 respondents) were not sure. Human error was cited most frequently as the reason the operators could not be trusted (64%). The importance of employing qualified, well-trained, responsible individuals was noted (12% or 15 respondents). The residents feel that the operators of the facility would be fallible, and that they could make mistakes.

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[1] Question 51.

[2] Question 84g.

Similar reservations regarding site operation and management were expressed during consultations with the public. Concern for the potential implications of human error at the plant was mentioned frequently. Residents were not confident that MOE guidelines and regulations will provide sufficient safeguards for themselves and the environment, nor were they convinced that the enforcement of the regulations and guidelines will be adequate. Several residents were concerned that pollution control equipment would be shut down at night. Others were worried that OWMC will not maintain an ongoing commitment for the duration of the facility life and beyond. [1] Skepticism was expressed regarding the future financial and corporate commitment by OWMC at a level necessary to ensure the safety of the community. It is important to area residents that they receive assurances that the facility will be well managed and safe during construction, operation and decommissioning, and that the facility will maintain a high level of financial security.

The issue of responsibility for trucking the waste received some attention from area residents. They questioned whether the responsibility would rest with OWMC or a private company. If a private company is to be responsible, residents felt that safety, rather than cost, should be the main criterion when selecting the best truck contract. Although not directly stated, residents are likely aware of instances where cost appears to have been the deciding factor in awarding a contract over other considerations perceived as more important by the public, and are concerned that similar decisions would be made.

Residents are also worried that the West Lincoln facility would become the "dumping ground" for U.S. hazardous waste. Seven percent (12 respondents) expressed concern that waste would be imported from the United States in a question at the end of the interview that asked if they had any other concerns about tne proposed facility.[2] Similar concerns were noted in other interview questions, although less frequently.

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[1] Facility decommissioning and post-closure are discussed in Chapter 13.

[2] Question 108.

These concerns seem to suggest that a number of residents do not fully trust OWMC (and MOE) to ensure the safe operation of the facility. These feelings may be due to past experience and media reports on situations elsewhere.

Experience at Existing Facilities

Frequent changes in management at the Rollins facility in Baton Rouge were stated as having prevented the community from establishing an ongoing relationship with the facility management and from obtaining commitments for monitoring activities. Community contacts expressed concerns that the company may alter records and logs.

At the Rollins facility in Bridgeport, New Jersey, human error may have contributed to two accidents which occurred at the site in the late 1970s. The Rollins facility in Deer Park, Texas has been fined for a number of violations of state rules governing the monitoring and controlling of leachate.

Problems related to site operation and management were not identified at the Stablex facility in Quebec.

11.3.9 MONITORING

The two areas of public concern about monitoring are documented in this section:

- concerns and perceptions of the extent and scope of monitoring;
- concerns about the nature of the monitoring program.

Extent and Scope of Monitoring

Some general concerns about monitoring were noted during the public consultation process. One individual remarked that the proposed facility should be closely monitored to ensure better than adequate safety measures and pollution assessment from the site. A number of individuals foresaw a need for studies to determine pre-operational baselines, such as for health and agriculture, to be compared with monitoring results. Concern was expressed that only selected contaminants would be monitored. The residents feel that a comprehensive monitoring program should be implemented, with social and environmental factors monitored throughout the region.

Monitoring of emissions and leachates were noted in particular by some residents. In terms of the time period over which monitoring should occur, residents were of the opinion that monitoring should be carried out over the life of the facility and following decommissioning as well.

Those people participating in the resident interviews were provided with a number of factors that could be monitored and were asked to indicate the importance of each. 'Very important' and 'important' ratings were given to monitoring of air and water quality (98% or 227 respondents), contaminants in soils, crops and livestock (97% or 227 respondents), community monitoring of public health (88% or 204 respondents) and economic factors (87% or 202 respondents).[1]

Nature of the Monitoring Program

A lack of confidence that the monitoring program would be implemented as promised was expressed during the public consultation process. Residents were not confident that OWMC or MOE would carry out a responsible monitoring program. Other residents hold concerns regarding responsibility for monitoring; they would like monitoring to be carried out by someone they trust.

Support was given to community involvement in monitoring and/or monitoring by an objective independent group such as a university. One individual felt that the municipality should be given the authority to monitor the facility and possibly even to shut it down under certain conditions. Some residents were concerned that the monitoring data would be falsified prior to public release or even withheld from the public (for example, should the information be deemed as having the potential to cause public panic). Other residents were worried that MOE would treat OWMC lightly if regulatory infractions were identified through monitoring. These individuals contended that a monitoring program would be insufficient in itself to ensure their health and safety and protection of the environment; steps must be taken to rectify any problems identified through the monitoring program. Residents were also concerned that the monitoring program would be curtailed or shelved in the event of an economic downturn. The residents would like guarantees of an ongoing monitoring program.

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[1] Question 90.

Those interviewed identified the importance of various options or characteristics of a monitoring program. Ninety percent (204 respondents) rated regular public reports on facility operations as being very important or important. [1] Local resident representation on a committee responsible for monitoring facility operations was very important or important to 86% of the respondents (202).[2]

Despite the importance given to community involvement in monitoring, residents reported skepticism regarding the ability of the community to fulfill this role. A majority of those interviewed (56%) did not feel that monitoring by the community would relieve their concerns about the safety of the facility.[3] The respondents felt that the community lacks the expertise needed to monitor the facility and could not afford this expertise without financial assistance (32% or 37 respondents). Another 12% (14 respondents) qualified their remarks by suggesting their concerns would be addressed provided that knowledgeable people were on the community monitoring committee. Other residents commented that a comprehensive monitoring program would be necessary (11% or 13 respondents). Finally, some respondents argued that a monitoring program is not enough to ensure safety or prevent pollution (19% or 22 respondents).

Experience of Existing Facilities

At the Tricil facility in Sarnia, a semi-annual sampling and analysis monitoring program is carried out; Tricil has agreed to monitor surface and subsurface water at the site for 30 years following site closure. A committee with representation from Tricil, MOE and residents was established to monitor the site and activities. The community members do not feel confident about the interpretation of the data without a neutral party involved; however, they do not have any funds to obtain such assistance. Community members concerned about long-term health implications of the facility believe there should be additional health studies.

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1. Question 90b.
2. Question 90j.
3. Question 84h.

Community monitoring is not carried out at the Rollins facility in Baton Rouge. The community has requested monitoring and warning equipment on a number of occasions but have been turned down due to a lack of funds. A number of individuals expressed concern that Rollins may alter its records and logs. Since 1980, there have been more than 30 charges laid against Rollins by the State of Louisiana.

Leachate is monitored at the Rollins facility in Deer Park, Texas, but the company has incurred fines for violations of State regulations with respect to monitoring and controlling leachate. The State Representative for the area is skeptical about the number of violations Rollins is reporting.

The Ministry of Environment is responsible for monitoring at the Stablex facility in Blainville, Quebec and maintains an office on-site. The Ministry monitors waste delivered to the facility and leachate in the landfill cells. Initially, a committee of citizens, MOE officials, Town officials and Stablex representatives was established to deal with concerns and problems. The committee was originally intended to undertake some monitoring once the facility was in operation. However, there did not appear to be a need for the committee and it is now dormant.

11.3.10 TRUST

An underlying theme running through many of the issues discussed above is a distrust of or lack of confidence in OWMC/MOE to act in the best interests of the residents and the environment. Many residents do not agree with the experts' contentions that the technology would be safe, or that the facility would be managed in a safe manner. Sixty percent (60%) of respondents (143) to the resident interviews do not believe that the facility will safely dispose of hazardous waste.[1]

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[1] Question 84(f).

Residents cite cases where technology has not functioned as predicted or where human error has led to the release of toxic materials to the environment. They are concerned that employees would be improperly or insufficiently trained and would lack commitment to the safety of area residents and the environment. More than half of the respondents to the resident interviews (132 or 57%) disagreed that facility operators could be relied on to operate it safely.[1] This belief was based on a concern for human error (83 or 64% of the respondents) and general lack of trust in the operators (13 or 10% of respondents). The need for qualified, well trained responsible employees was noted by 15 respondents (12%).[2] A fear was raised that long-term environmental protection would be compromised for short-term economic considerations (for example, cost considerations given precedence over maintenance of equipment, replacement of malfunctioning equipment, retraining and upgrading of employee skills, and safety in the selection of truckers to transport hazardous waste).

Some residents are not confident that a responsible monitoring program would be implemented. Some feel the monitoring program would not be comprehensive, results would not be available to the public, or if they were, would be falsified or withheld. They worry that actions taken to address problems identified through monitoring would be ineffective and that MOE would not enforce regulations. Finally, residents cited concern that a commitment to ongoing monitoring would not be given or that the monitoring program would be restricted or shelved in the event of an economic downturn.

With regard to compensation, residents were not confident that displaced households and those left behind would be treated fairly. Some residents draw their concerns from their experience with the provincial expropriation agency (with respect to the widening of Highway 20) that left them feeling that they had been unfairly treated.

That some residents distrust OWMC was reflected in their comments about the siting process.

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[1] Question 84(g).

[2] Question 84 (g) (i).

Comments were expressed regarding apparently conflicting or contradictory information; residents indicated they did not trust the information provided by OWMC, as seen in their suggestions that future information be honest and less complex. (Twenty-nine (29) or 33% of respondents suggested that OWMC information should be honest and less complex.[1]) Some individuals were convinced that the decision regarding the location of the facility had already been made (i.e. a political decision) (51 or 43% of respondents[2]) and that the community would be unable to influence the final outcome (122 or 52% of interview respondents[3]).

Regardless of the steps taken by OWMC to deal with the risks and impacts of the proposed facility, unless this issue of trust is resolved, unnecessary concern and anxiety (which could result in negative social impacts) will remain.

11.3.11 SOCIAL EQUITY

The proposed facility is intended to help address the need for appropriate management of Ontario's hazardous wastes. The residents of West Lincoln and those along the access route are being asked to assume the potential risks and impacts associated with the facility on behalf of the residents of Ontario. The proposal consequently raises an issue of social equity or justice: should a small group of individuals or communities be required to bear these effects for the benefit of the general public and the generators of the waste?

While social equity was not addressed directly in the resident interviews, a review of the residents' responses suggests that a sense of unfairness or inequity underlies many of their concerns. Respondents felt that OWMC was taking advantage of a small rural population or of an area with little political clout.[4] Forty-three percent (43%; 51 respondents) believed that the decision has already been made; 39% (46 respondents) felt that the decision will be political, made regardless of residents input.

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[1] Question 97b.
[2] Question 81b.
[3] Question 81a.
[4] Question 81b.

Another 18% (21 respondents) believed they will not be able to influence the decision because of their lack of clout or low population.

Initial reactions to the announcement of the preferred site included, 'the process is unfair' and 'why locate the facility in West Lincoln' when the waste is produced elsewhere.

Comments provided through the public consultation process provide further insight into residents' feelings of unfairness. Local residents would bear the burden of the risks and impacts associated with the proposed facility for the benefit of all Ontarians, according to some residents. Compounding this unfairness is the fact that the area does not benefit from the industry that produces the waste (e.g., through jobs and industrial tax revenues). Finally, some residents noted that the process places the onus on residents to prove that the OWMC facility would be harmful; this was considered as unfair and difficult to do because OWMC has many technical consultants and a vast budget compared to the local opposition.

The proposed facility will create few benefits for the community but will generate risks and impacts as well. There is a need to ensure that the residents and municipality are left at least as well off after facility development as before. Recognition by OWMC of the need to balance social equity with the potential risks and impacts can be communicated through the approach taken to deal with anticipated effects of the facility and residents concerns.

Chapter 12 focusses on steps which OWMC should take to address the issues and concerns documented in this Chapter, as well as to deal with the potential social impacts. Those impact management measures to which OWMC has committed itself are identified in the next Chapter, along with those that have been recommended by OWMC's consultants but for which no commitment has been made at this time.

CHAPTER 12

IMPACT MANAGEMENT MEASURES

12.1 INTRODUCTION

Whether and in what way individuals act on the actual and perceived effects of the proposed facility depends to a large extent on the corporate actions taken by OWMC. Mitigation measures intended to deal directly with standard impacts are documented in Chapter 9. It is the purpose of this chapter to recommend impact management measures that would address residual standard impacts, special impacts (discussed in Chapter 10), and residents' concerns and perceptions about the proposed facility.

The impact management measures recommended in the following are proposed on the basis of professional experience and judgement and take into consideration residents' concerns and perceptions and the issues associated with the facility. Consideration has also been given to measures suggested through the public consultation process and those implemented at existing waste management facilities. The public's suggestions of corporate responses are noted in Table 12.1.

The impact management measures are also proposed in light of the goals and objectives that OWMC is using to guide the decision process with respect to the proposed facility. The specific goals in order of importance are:

1) to minimize risk to human health;
2) to minimize environmental impact;
3) to minimize financial costs to OWMC and the people of Ontario.

TABLE 12.1
IMPACT MANAGEMENT MEASURES - PUBLIC SUGGESTIONS[1]

ENVIRONMENTAL CONTAMINATION

- Provision of alternative water sources if required
- Community involvement in monitoring stack emissions
- Grants to cover medical needs

AGRICULTURAL IMPACTS

- Liability/compensation for damage due to spills, crop contamination, loss of marketability of produce, reduced productivity
- Educational program to combat perceived contamination of agricultural products
- Provision of alternative water supplies if required
- Compensation for break-up of viable farm operations
- Compensation for farmers who move elsewhere (e.g., to account for higher farm prices in other municipalities)

ECONOMIC IMPACTS

- Compensation for direct costs and damages
- Compensation for loss of land value/property value protection
- Compensation for structural damage to roads and nearby houses due to additional truck traffic
- Compensation for added municipal costs
- Assist municipality in enhancing industrial development strategy
- Hire local residents at facility

TRANSPORTATION

- Alternative access routes
- Service roads along access route
- Regular plowing of sidewalks during winter for pedestrian use (Vineland)
- Strict enforcement of all transport safety regulations/'Spills Bill'
- Strict enforcement of use of designated access route
- Day and time restrictions for transport of waste materials
- Implement safe speed limits
- Installation of signs, lights, speed bumps and patrolled crosswalks
- Educational programs

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1. Public suggestions of impact management measures were provided through the Phase 4B Resident Interviews, Phase 4B Access Route Drop-off Survey, Kitchen Table Meetings, One-on-One Interviews, Community Leader Interviews and the OWMC public consultation program.

Table 12.1 continued

EMERGENCY PREPAREDNESS

- Establishment of an emergency response station in Vineland
- Provision of proper training and full-time firefighters to deal with facility-related emergencies
- Improvements of fire protection and emergency services
- Provision of on-site emergency teams
- Financial assistance for improved municipal emergency response
- Establishment of evacuation procedures (e.g., for Vineland Public School)

NUISANCE IMPACTS

- Construct a berm around facility
- Establish a buffer zone
- Landscaping of site

COMPENSATION (GENERAL)

- Full, fair compensation for displaced households (including relocation costs; assistance in moving; compensation for the stress/inconvenience of moving)
- Compensation for those who remain
- Compensation for 'stigma' effect on community character
- Clear, responsive mechanisms for obtaining compensation
- Establish graduated compensation; greater compensation for those nearest the site
- Financial compensation to local community (as opposed to Smithville)
- Development of research centre
- Community benefits such as community and recreation facilities and hard service improvements

MONITORING

- Comprehensive monitoring program
- Long-term monitoring (site life and post-closure)
- Guarantees of an ongoing monitoring program
- Public involvement in monitoring site operations
- Financial assistance to provide appropriate expertise to represent community
- Neutral, third party involvement
- Public release of monitoring results
- Pre-operational baseline studies
- Monitoring of health and agriculture, emissions and leachate, social, economic and environmental factors

In addition, based on numerous interviews with residents and community leaders at the sites visited, IER staff have developed several principles to guide the determination of impact management options. These are:

- information must be clearly presented.
- there should be full openness and disclosure of information at all times.
- there should be opportunities for each and every individual to have access to information, beyond the formal roles that might be given to representatives from the municipalities and the Region.
- there should be community involvement in decisions affecting the community.
- there should be neutral third party involvement.

The impact management measures should aim to minimize the public's distrust in OWMC and the management of the site. The overriding goal should be to leave the residents and the community at least as well-off following facility development as they were before.

The following sections identify corporate responses for the relevant social impacts, issues and public concerns. Key points concerning the recommendations are highlighted for each.

Impact management measures addressing natural environment risks and impacts, agricultural impacts, economic impacts and transportation risks and impacts are documented in the relevant reports (Ecologistics Ltd. 1988; Gartner Lee Ltd. 1987; M.M Dillon Ltd. 1987; Morehouse Economic Planning Consultants 1987). Public concerns and perceptions relating to these impact areas, however, could have ramifications for social impacts, depending upon the actions residents take in response to their concerns. Where appropriate, impact management measures have been recommended to address these concerns. Concerns relating to environmental risks and impacts are addressed under 'Concern for health and safety'; transportation risks and impacts, under 'concern for safety - transportation issues'. Impact management measures for property value impacts, an economic issue, are dealt with also.

OWMC has given its commitment to a number of the impact management measures noted. These measures are distinguished from those which have not received OWMC commitment.

12.2 RESIDUAL IMPACTS

Residual impacts might include noise, odour, dust, visual intrusion, lighting, and other unanticipated nuisance impacts.

- Complaint procedure
- Direct response to nuisance
- Opportunity to relocate
- Cash payments for residual impacts
- Monitoring of nuisance impacts

It is anticipated that OWMC will do whatever is reasonable to mitigate nuisance impacts. Nonetheless, it is likely that some residual impacts will remain. Furthermore, although OWMC has endeavoured to identify all impacts that would result from facility development, it is conceivable that unexpected impacts will occur. It is important then, to establish impact management measures to address post-mitigation nuisance impacts.

A complaint procedure would provide residents with a means for redress. The complaint procedure should be clearly defined, easily understood and widely disseminated to the public. Complaints should be responded to quickly and the process for resolving complaints should be fair. Results of any investigations should be reported to the complainant.

The committee responsible for administration of the complaint procedure should include one or more neutral third parties, and OWMC and community representatives.

Where no further mitigation measures are feasible, consideration should be given to providing cash payments for residual impacts. This form of compensation should be considered only after the full range of mitigation options have been investigated and implemented to the greatest extent possible.

If further mitigation or cash payments are unacceptable, the opportunity to relocate should be provided if the individual so wishes.

These impact management measures should apply to all households affected by residual nuisance impacts. Monitoring of the nuisance impacts should be undertaken to ensure that: (1) the impacts are occurring as predicted; and (2) the mitigation measures are functioning as expected. Adjustments should be made to the direct impact zone[1] as required on the basis of the monitoring results. Figure 12.1 shows the direct impact zone as defined at the time of writing.

A link should be established between the complaints bureau and all monitoring committees. Complaints can provide useful information with respect to adjustments to the monitoring program (e.g., other nuisances to be monitored, changes to the area over which monitoring should occur).

12.3 PROPERTY VALUES

- Property value protection program
- Monitoring of property values

OWMC has developed a Property Value Protection Program.[2] All properties within the direct impact zone will be covered by the Program, which will guarantee fair market value to owners of these properties. If an owner tries to sell the property and cannot obtain fair market value, the Corporation will purchase the property at fair market price. The properties will then be resold on the open market; the Program will apply to future as well as existing owners (OWMC 1988).

Within the direct impact zone are a number of properties where impacts will probably remain at unacceptable levels even after mitigation. OWMC has established a 'buy-out policy' for these properties. Essentially, the Corporation will hold discussions with these homeowners; part of these activities will include a proposal to buy the properties directly. OWMC will also assist these households with relocation costs.

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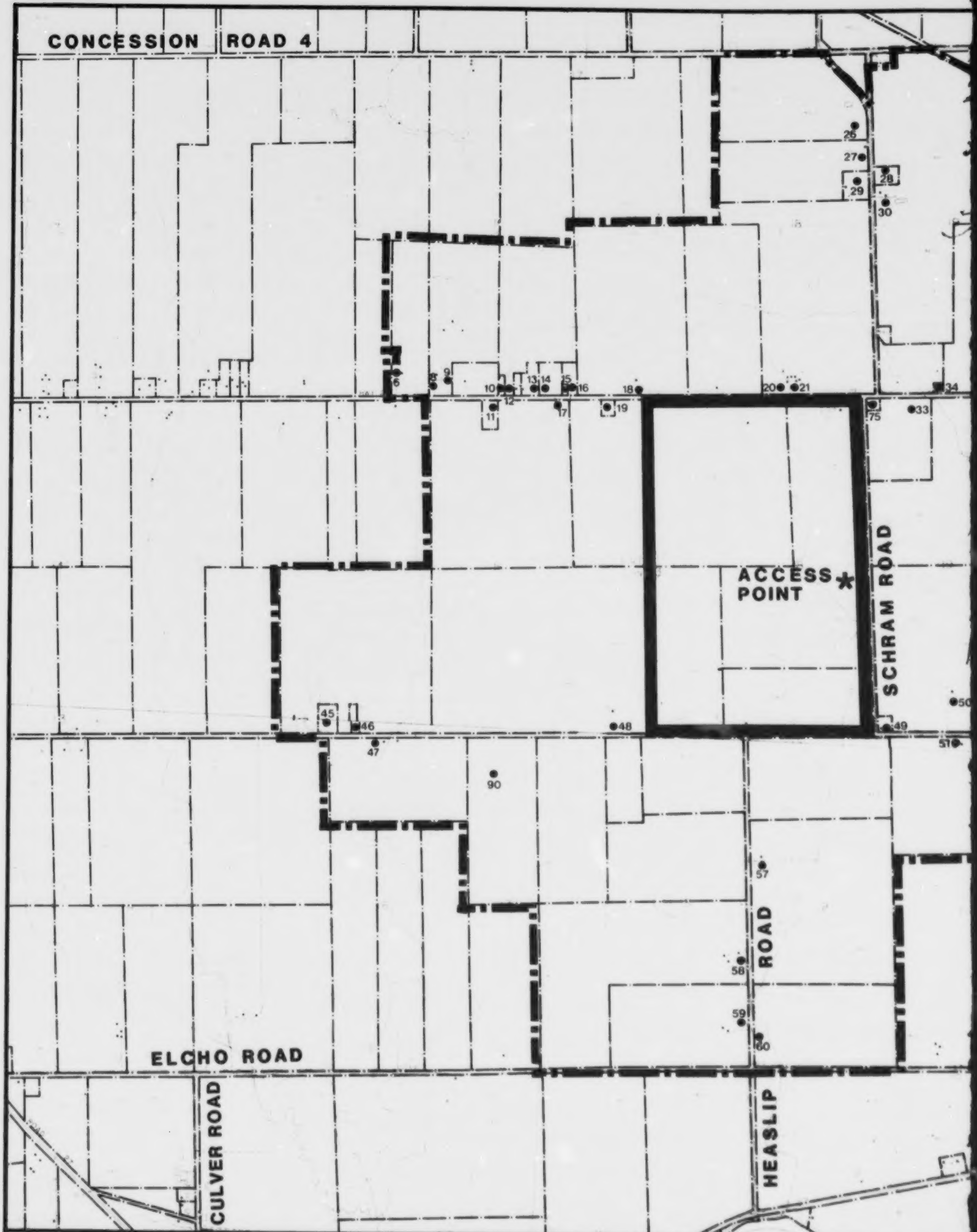
[1] The direct impact zone is described elsewhere (Ontario Waste Management Corporation 1987 and 1988). Zone boundaries will provide the basis for some forms of impact management measures.

[2] The program is described in detail elsewhere (Ontario Waste Management Corporation 1987 and 1988).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ELCHO ROAD
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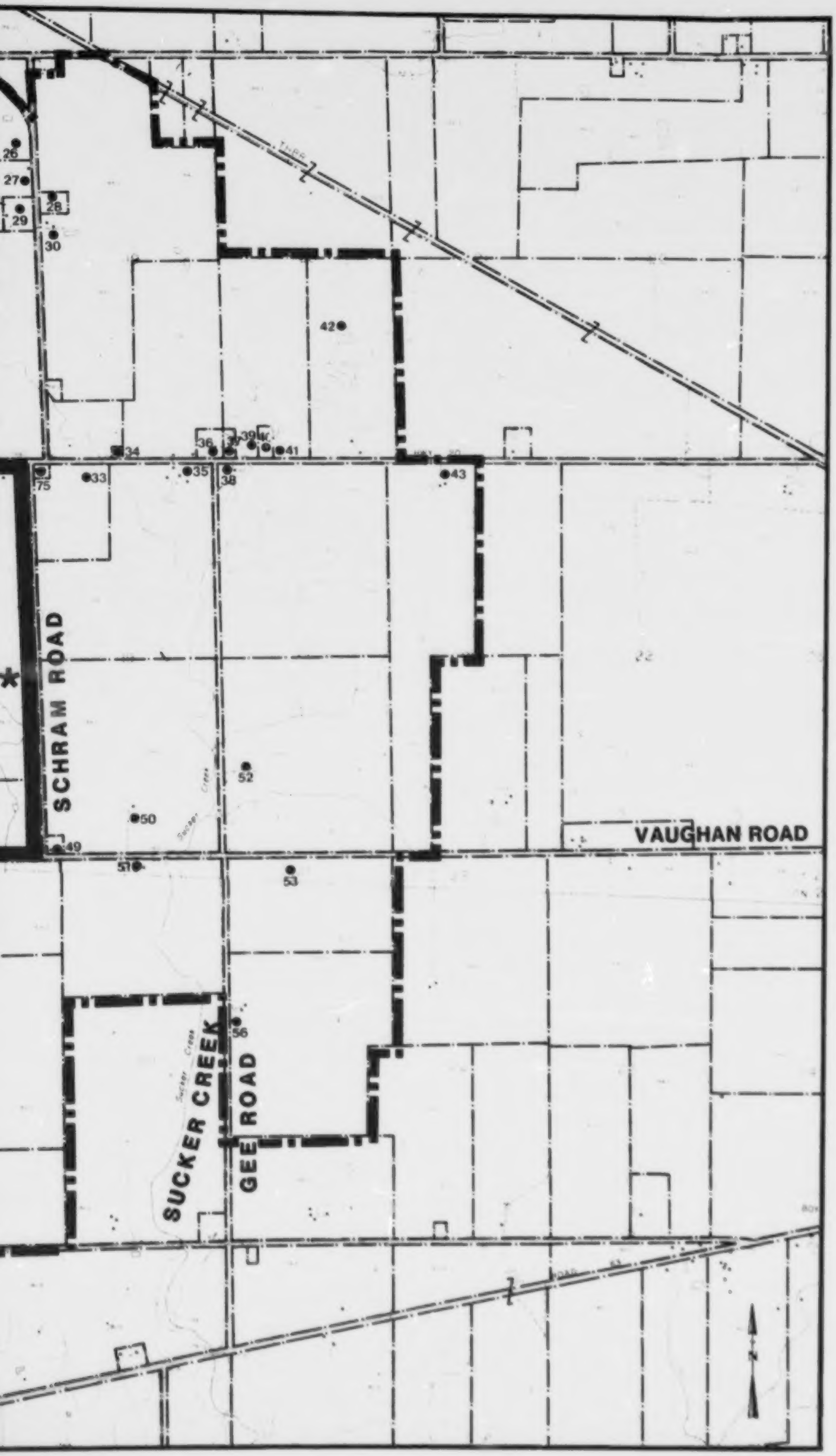

OWMC Ontario Waste Management Corporation

Consultant:

ier

Legend:

▬ **Direct Impact Zone**

● 36 **Residences**

▬ **Preferred Site**

Scale 1:20,000

Metres
250 0 500 1000

DIRECT IMPACT ZONE

March 1988

Figure 12.1

Details of the program should be clearly set out and available to the public. Residents' applications under the property value protection program should be dealt with within a fair time period. Property values will be monitored and the boundaries of the direct impact zone (and thus the property value protection program) adjusted on the basis of the findings. Findings should be publicly available.

12.4 CONCERN FOR HEALTH AND SAFETY

- Comprehensive, multidisciplinary monitoring program
- Monitoring committee with third party involvement
- Regular public release of monitoring data
- Monitoring of well-water and surface water for individual properties within a pre-determined zone
- Employee training and upgrading
- Community review of operations and response to mishaps
- Emergency response plan
- Public information programs
- Facility newsletter
- Facility tours
- Visitor centre
- Liaison with industry and government officials re: waste production and policies

The public's concerns encompass the potential for environmental contamination and the ensuing risk to health and safety. A related issue is the concern for the safe operation and maintenance of the facility, and in particular, the potential implications of human error.

To alleviate residents' fear and distrust, impact management measures should be guided by the principles of public access to information, the need for a trusted, objective source of information and the need for a guarantee of health and safety. Several options are available. Extensive employee training and upgrading programs and incentives encouraging safe operational practices would minimize the potential for human error and promote employee commitment to the safety of the community. Regular review and revisions of safety procedures should be an integral part of site operations and management.

Community review of operations and response to mishaps would aid in reducing the public's distrust of the facility management and their fear for safety. Similarly, a comprehensive multidisciplinary monitoring program would ensure early detection of any environmental problems and thus reduce the potential for risks to health. A monitoring committee with neutral third party and community involvement and regular release of information to the public would help dispell residents concerns. Public information programs (perhaps on safety measures or OWMC's emergency response capability),[1] facility tours, a visitor centre and a facility newsletter would provide awareness of the facility's safety and remove some of the mystery out of the technology and site operations.

OWMC's mandate includes exploring alternative means of managing hazardous waste. OWMC could pursue this area of its mandate through liaison with industry and government officials to examine alternatives such as ways to reduce waste production, control of products on the market or new technologies.

12.5 CONCERN FOR HEALTH AND SAFETY - TRANSPORTATION

- Improvements to signs/signals, pedestrian crossings
- Complaints mechanism
- Community monitoring committee to review complaints, operating procedures, mishaps, trucker training program
- Driver training (including emergency response training and procedures to ensure use of designated access route)
- Emergency response capability along access route (training and equipment for local firefighters)
- Emergency response plan
- Ongoing discussions with police, fire and regional officials to monitor transportation experiences
- Public information
- Regional Emergency Response Unit

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[1] Refer to Section 12.8 for emergency preparedness impact management options.

Public concerns regarding this issue include the potential for accidents, spills and leaks, driving practices of truck drivers and municipal emergency response capability. A number of measures can be implemented to minimize the potential for traffic mishaps or more serious incidents.

Safe truck driving practices can be promoted by training the drivers in procedures relating to the use of the access route and in safe driving habits. Incentives could be offered to encourage safe driving practices and measures implemented to deal with drivers who fail to follow procedures or choose not to use the designated access route. These measures would help ensure that the OWMC'S policies related to transportation and the access route are followed.

To address concerns for emergency response capability, residents should be advised through a public information program of the level of emergency preparedness of both OWMC and the municipality. In addition, truck drivers should be trained in emergency response.[1]

A complaint procedure, such as that recommended for facility operations, would provide residents with a mechanism through which their grievances could be addressed.

A community monitoring committee should be established to hear complaints, review operating procedures, mishaps and driver training programs. Monitoring committee membership should include a neutral third party, agreed upon by the municipalities and OWMC.

Transportation experiences could be monitored through ongoing discussions with police, fire and regional officials.

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1. Refer to Section 12.8 for the discussion on impact management measures for emergency preparedness.

Acknowledging that the communities along the access route, particularly Vineland, have significant problems related to existing Regional Road 24 traffic, OWMC could play an important role in improving safety and relieving the public's concerns. Dangerous or potentially dangerous locations along the access route are known (e.g., the hill at Regional Road 81 and road crossings at Vineland Public School). OWMC should encourage or assist the municipalities and Region in improving the safety of these road sections. Trouble spots should be monitored.

12.6 OTHER FACILITY-RELATED ACCIDENTS

- Small claims fund
- Widely disseminated guidelines and procedures for compensation under small claims fund

The potential exists for minor facility-related accidents resulting in property damage. Such incidents could arise from construction activities, facility operations (including waste transport) and post-closure activities. To provide compensation for property damage, a small claims fund should be established. The fund would preclude lengthy and costly court proceedings and provide residents with a means of redress in a non-confrontational environment.

Requests for compensation under the fund should be responded to quickly and the process for resolving claims should be fair. A neutral third party, agreed upon by the municipalities and OWMC, should administer the small claims fund. Guidelines and procedures relating to the fund should be widely distributed to the public and should be clear and easy to understand.

12.7 COMMUNITY CHARACTER/SATISFACTION WITH COMMUNITY AS A PLACE TO LIVE[1]

- Cooperate with local/regional officials to meet plans and policies
- Maintain unused OWMC lands in agriculture
- Multidisciplinary monitoring program
- Regular public release of monitoring data

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[1] This includes concern for effects on agricultural produce sales.

- Monitoring of community changes
- Monitoring of environmental conditions
- Ongoing discussions with the Ontario Ministry of Agriculture and Food and Federation of Agriculture to ensure produce marketability
- Cooperate with provincial, regional and municipal officials to help achieve plans and policies
- Research and development centre

Several options are available to OWMC to help preserve the rural-agricultural character of the area and develop a positive perception of the community. These include cooperation with provincial, regional and local government officials to help achieve the intent of relevant plans and policies. Any unused OWMC lands could be kept in agricultural use to maintain continuity in land use. A multidisciplinary monitoring program can ensure that any community or environmental changes are identified and dealt with promptly before becoming severe and significantly altering the character of the area and the quality of life. Public release of monitoring results would keep residents informed of site operations and effects, hopefully minimizing their distrust of OWMC and thereby enhance their satisfaction with the area as a place to live.

Concern has been expressed that the public-at-large will perceive the area's agricultural produce as unsafe. Ongoing discussions with the Ministry of Agriculture and Food and agricultural organizations could help reduce the potential for public misconceptions.

Consideration should be given to the development of a research and development centre in the Township of West Lincoln, directed towards the management of hazardous waste. Such a facility could help promote the area as a leader in environmental management.

12.8 EMERGENCY PREPAREDNESS

- Maintenance of on-site emergency response teams
- Development of a facility emergency response plan
- Assistance to municipalities (financial and otherwise) to upgrade their emergency response capabilities (equipment, manpower, training)
- Assistance to municipalities in developing emergency response plans
- Public awareness program
- Initiate discussions to develop an agreement of cooperation between the municipalities, Region of Niagara and OWMC with respect to emergency response
- Regular review and upgrading of emergency response plans and procedures
- Participation in regular exercises to practice emergency response
- Training of truck drivers and site employees in emergency response
- Implementation of measures to ensure quick identification of materials involved in an emergency on-site or along the access road
- Regional emergency response unit

In keeping with its goals to minimize risks to health and safety and to minimize environmental impacts, OWMC should ensure that appropriate emergency response capabilities are available on-site and in the communities along the access route. OWMC should develop a facility emergency response plan and maintain on-site emergency response teams. The Corporation's emergency response plan should be available to the public so that in the event of an emergency residents are aware of the information they would obtain and actions they should take.

Off-site emergencies are the responsibility of other agencies (e.g., local fire departments, Regional Police Force), but these agencies may not have the capability to respond to emergencies related to the OWMC facility. Assistance should be provided to the communities along the access route and at the site to ensure sufficient preparedness and a competent response. Although the preparation of an emergency response plan is usually a municipal responsibility, OWMC can play a significant role in ensuring that appropriate plans are developed by providing financial or technical assistance or both.

Emergency response capability is a function of appropriate equipment, manpower and training. OWMC should be prepared to offer assistance to the municipalities so that they can upgrade their emergency response resources. It is important that municipal front-line responders receive regular training. OWMC should consider the provision of financial assistance for emergency training or offer training courses, or both.

OWMC on-site response teams should receive continual training to upgrade their skills. Emergency response training could also be extended to on-site employees and the truck drivers.

Regular review and update of plans and procedures, and regular exercises to test response capabilities are two important aspects of emergency response preparedness. OWMC should undertake both activities and encourage the municipalities to do likewise. Arrangements should also be made for joint emergency response exercises, involving the municipalities and OWMC.

Information should be provided to the public so that residents are aware of the emergency response capabilities of their municipality and OWMC and the actions that residents should take in the event of an emergency.

As part of OWMC's site operation procedures, measures should be implemented to assist in quick identification of waste materials involved in any spills, leaks or accidents, both on-site and along the access route. OWMC will attempt to schedule all waste and material deliveries to the facility about a week in advance. This prior knowledge (of the wastes and materials scheduled to arrive) will assist in emergency preparedness.

A Regional Emergency Response Unit, made available for use throughout the Region, would augment emergency preparedness particularly for incidents involving dangerous or hazardous goods. OWMC could encourage the establishment of such a unit. The unit could be stationed in a central location such as Vineland, thus providing additional emergency response capability for any OWMC-related incidents.

12.9 STRESS

Stress experienced by residents will be attributable to their perceptions of the facility and its risks, and once the facility is constructed, any problems that occur and OWMC's response to the problems and public concerns. Stress will also be influenced by the residents' perceived lack of control, the trust and credibility of OWMC and the quality of information received about the facility. As noted in Chapter 10, stress can be addressed in part by increasing public control, ensuring the safety of residents and providing ongoing operational information.

The impact management measures, including the monitoring program, implemented by OWMC will contribute towards minimizing the stress experienced within the community. In particular, a number of measures recommended elsewhere in this chapter to address other social impacts and issues will assist in reducing stress or the potential for stress, either directly or indirectly. Ongoing operational information can be provided to the public through a public awareness program of activities and operations, facility newsletters, facility tours and/or a visitors centre. Public release of monitoring data will keep the community informed of the facility's operating record. Efforts to promote public awareness of the emergency response programs and procedures in place (on-site and in the municipalities) and safety measures taken at the facility and along the access route should be considered.

Community review of facility operations and involvement in the monitoring program can provide the community with a measure of control over the quality of the environment. A mechanism for dealing with public complaints and concerns, such as a complaints bureau, with well-defined and accepted procedures can provide a measure of public control. Fair and prompt dealings with any problems and public concerns and third party involvement in the monitoring program will assist towards public trust in, and credibility of, OWMC.

12.10 COMMUNITY STABILITY AND COHESION

Community stability and cohesion will be affected through responses taken by individuals on the basis of their perceptions of the facility and the risks and impacts associated with it (e.g., through out-migration or withdrawal from the community). Hence impact management measures should implemented which aim to maintain residents' satisfaction with the community (e.g., their desire to stay in the community) and their involvement in the community. Such measures will include those which maintain or enhance the attributes of the community valued by the residents, reduce the disruption experienced by residents, ensure their safety, and provide a positive image of the facility. Like stress, many of the impact management measures implemented to address other impacts, risks and issues will indirectly address impacts on stability and cohesion. These include measures to address residual nuisance impacts, a comprehensive, multi-disciplinary monitoring program with community involvement and public release of monitoring data. Steps which promote public information and awareness of facility operations and activities, safety and emergency response measures, including facility newsletters and tours, will keep the community well-informed. Similarly, good community relations, including fair and prompt responses to complaints and concerns of individuals will provide a more positive image of the facility.

To help OWMC employees who move into the community to become involved in the community, packages of information on community groups and facilities and services could be provided by OWMC.

12.11 MONITORING

12.11.1 INTRODUCTION

OWMC has given its commitment to the establishment of a monitoring program. The purpose of such a program is to ensure that the facility is functioning properly, that the mitigation measures are effective and that any unanticipated problems are identified and addressed. A monitoring program provides assurance that the facility is safe and will not adversely affect the community.

The following discussion is divided into two parts. The first, Section 12.11.2 , describes the general characteristics on which OWMC's monitoring program should be based in order to address the community's concerns. Section 12.11.3 identifies the recommended social monitoring program.

12.11.2 MONITORING PROGRAM CHARACTERISTICS

It is recommended that OWMC's monitoring program include the following characteristics:

- comprehensiveness
- monitoring during the construction, site operations, decommissioning and post-closure phases of the project
- pre-operational baseline monitoring
- guarantees of an on-going program
- public involvement
- neutral, third party involvement
- public release of monitoring results

The monitoring program should be designed to respond to expressed community concerns in terms of: areas to be monitored (e.g., health, agricultural product contamination, property values, nuisance impacts, transport of waste materials, facility operations) and the approach to be taken (e.g., roles and responsibilities of the public, OWMC and other individuals/organizations, public release of information).

To ensure public acceptability and consideration of the public's concerns, the monitoring program should be developed in discussion with the community. A formal agreement should be made with the Township of West Lincoln and the Region of Niagara that includes definitions of community involvement, design of the monitoring program, structure of monitoring committees and the role of any neutral third parties. The agreement would provide guarantees of an on-going program and establish an accepted and understood process for dealing with impacts.

The monitoring committees (and monitoring program) must have the public's confidence. All committees monitoring the OWMC facility should have representatives from the municipalities, the Region and the local community. There should be neutral third part involvement, both on the committees and in interpreting the monitoring results for the community. The roles and responsibilities of the committee members should be clearly defined and widely known. The responsibilities of the committees should include modification of the direct impact zone and other OWMC impact management policies and programs based on the monitoring results.

Results of monitoring activities should be widely disseminated to the public through such vehicles as public libraries and the media.

Monitoring should be conducted during the pre-operational, construction, site operations, and decommissioning/post-closure phases. Pre-operational monitoring is important because the data gathered during the other project phases will be compared against the social characteristics of the community as established through pre-operational monitoring in order to identify any changes attributable to the OWMC facility.

Finally, the monitoring program should be flexible so that changes can be made as new issues and concerns arise or in response to the results of the program.

12.11.3 SOCIAL MONITORING PROGRAM

The specific goals of the social monitoring program are to:

- determine whether impacts are occurring as predicted, i.e., to measure actual impacts against predicted impacts;
- identify any unanticipated impacts;
- provide an early warning of impacts so that contingency measures can be implemented;
- provide guidance for impact management measures and assistance in planning for, and adopting to, project-related changes;
- determine the effectiveness of impact management measures;

- ensure compliance with agreed upon measures;
- establish baseline data on actual social impacts to increase general knowledge of social impacts related to hazardous waste management facilities.

Monitoring social impacts is particularly important because of the uncertainty associated with the special impacts and the limitations to the current understanding and available research regarding social impacts of hazardous waste management facilities. Table 12.2 identifies the range of parameters for a social monitoring program. The rationale for each parameter is provided, along with suggested measures, area of coverage and the suggested monitoring frequency. The actual indicators that would be monitored should be determined by discussions between OWMC, the Township of West Lincoln and the Region of Niagara.

It is important to note that a number of the monitoring parameters recommended in other consultants reports relate to the social monitoring program . For example, the monitoring of nuisance impacts (e.g., noise, dust) relates directly to the monitoring of disruptions of daily activities experienced by residents. A number of these monitoring parameters are included in Table 12.2 because of their social importance; they are listed under the headings of transportation, emergency preparedness and land use.

As a final consideration, the public has requested on a number of occasions that OWMC undertake health monitoring. This should not be an OWMC responsibility, but as a good corporate citizen, it is suggested the OWMC play a catalytic role in promoting community health monitoring by assuming the responsibility of bringing together the appropriate agencies to see that health studies are done.

12.11.4 CONCLUSIONS

The corporate response taken to address any problems identified through the monitoring program will influence the residents' perceptions of the facility and some of the potentially negative actions and attitudes that could result should be avoided. Implementation of a monitoring program that possesses the characteristics identified in

TABLE 12.2
SOCIAL IMPACT MONITORING PARAMETERS

PARAMETER	INDICATORS	RATIONALE	AREA	FREQUENCY
Population	• Total population/population change • Migration (e.g., out-migration/ in-migration) • Out-migration/in-migration attributed to OWMC facility • Population characteristics (age, sex, households (type, number, size, income), ethnicity/mother tongue, religion, education	• To assist in identifying population change attributable to the OWMC facility (e.g., through out-migration and in-migration) • Input to identifying actual impacts on community stability, cohesion and character	• Local community • West Lincoln	Annually
Employment	• Total OWMC employment • Number of new jobs by type • Number of local residents employed at OWMC facility • Number of OWMC employees commuters/local residents	• To determine whether the local hiring policy is working • Inputs into identifying any changes in community stability (migration)	• Local community • West Lincoln	Annually
OWMC Employee Household Characteristics	• Characteristics including age, sex, household (type, tenure, income); ethnicity/mother tongue, religion • Employee/households involvement in community and use of local facilities • Distinguish between local resident and commuting employees	• Inputs into measuring any changes to community stability, character and cohesion	• Local community • West Lincoln	Annually

Table 12.2 (cont'd)

PARAMETER	INDICATORS	RATIONALE	AREA	FREQUENCY
OWMC Employee Residence Information	• Type/tenure of housing • Permanent and work-week residence of employees • Distance and frequency of commuting • Length of residence	• Measure facility-related in-migration/effect on stability of the community and housing supply	• Local community • West Lincoln	Annually
Housing	• Existing housing by type and tenure • Vacancy rate by type of unit • Selling/rental price by type and size of unit and location relative to OWMC facility • Length of occupancy	• Measure changes in housing stock, identified in terms of location relative to OWMC facility/access route	• Local community • West Lincoln	Annually
Education	• School capacity and enrolment • Number of OWMC children per school • Number of children leaving due to OWMC facility • Bus routes and times • Conflicts with school buses	• Identify any impact of OWMC facility on school enrolment (out-migration/in-migration) • Assist in measuring level of out-migration or in-migration associated with the OWMC facility • Identify any conflicts with school buses along access route	• Local community • West Lincoln • Access route	Annually
Community and Recreation Features	• Complaints concerning OWMC activity/traffic • Changes in use/users attributed to OWMC facility	• Measure disruption attributable to OWMC facility/use of the access route, including change in demand for services	• Local community • Access route • West Lincoln	Annually

Table 12.2 (cont'd)

PARAMETER	INDICATORS	RATIONALE	AREA	FREQUENCY
Disruption of Residents	• Results of measurements of nuisance impacts • Complaints received by Complaints Bureau • Residents' assessment of disruption; activities and use of property altered • Mitigation measures implemented • Measured effects of mitigation measures • Residents' perception of effectiveness of mitigation measures	• To determine the disruption experienced by residents due to nuisance effects of the OWMC facility • To determine the effectiveness of mitigation measures • To establish the appropriateness of the Direct Impact Zone	• Direct impact zone • Access route • Local community	Annually
Land Use	• Land use policies • Proposed and planned developments • Property values	• To assist in identifying changes in community character attributable to OWMC facility • Information collected on location relative to the OWMC facility	• Local community • Access route	Annually
Stress	• Reported presence of stress attributed to OWMC facility •Change in caseloads for family counselling, stress • Resident/community trust in OWMC/information • Perceived impacts • Satisfaction with monitoring results, mitigation and contingency measures, monitoring committee, complaints bureau and OWMC relations with the community	•Measure stress in community attributed to OWMC facility/use of the access route.	• Local community	Annually

Table 12.2 (cont'd)

PARAMETER	INDICATORS	RATIONALE	AREA	FREQUENCY
Satisfaction With Community	• Community attributes liked/ disliked • Reported change in satisfaction attributed to OWMC	• To identify any changes in satisfaction with community due to the OWMC facility and identify ways to increase satisfaction	• Local community	Annually
Community Goals and Values	• Official Plan policies and designations • Residents and community leaders visions of community growth and development • Attributes of community valued	• To identify any changes in community satisfaction and cohesion attributed to OWMC facility	• West Lincoln • Local community • Access route (Lincoln, particularly Vineland and Pelham)	Annually
Community Cohesion	• Change in membership in community groups • Resident employee involvement in community groups • Use of local facilities • Residents' desire to stay in community • Satisfaction with community (see parameter - Satisfaction with Community)	• To identify any changes in cohesion	• Local community	Annually
Impact Management Measures	• Impact management measures implemented • Monitoring tests of mitigation measures • Complaints received - type, location	• Ensure fulfilment of impact management measures as agreed/ conditions of approval • Ensure effectiveness of impact management measures	• Local community • West Lincoln • Access route	Quarterly

Table 12.2 (cont'd)

PARAMETER	INDICATORS	RATIONALE	AREA	FREQUENCY
Community Relations	• OWMC-related complaints by location • Residents' assessment of OWMC and OWMC's response to complaints/dealing with individuals and the community	• To monitor residents' perceptions of OWMC and OWMC's responses to complaints/problems	• Local community • West Lincoln • Access route	Quarterly
Emergency Response/ Preparedness	• Emergency events involving OWMC activities (distinguished by location, type, frequency, response time, clean up) • Special equipment provided for OWMC-related emergencies • Steps implemented to respond to any emergency response problems/limitations	• Indicators of emergency response preparedness	• Local community • Access route • West Lincoln	Annually
Transportation	• Number of accidents involving OWMC vehicles by type of accident (e.g., spill or no spill) and location • Any route changes used by OWMC • Reported conflicts between other vehicular traffic and pedestrians, and OWMC trucks • Residents' perceptions of effects of additional OWMC traffic and effectiveness of any impact management measures implemented by OWMC • Infractions of use of access route by truck drivers	• To determine number of accidents involving OWMC traffic and potential problem areas • To identify any problems of conflict between OWMC traffic and other users of access road and area • To determine problems with truck drivers meeting and following requirements including the use of the access route	• Access route	Annually

Section 12.11.2 and incorporates the parameters recommended above should contribute towards an increase in public confidence in OWMC as a responsible corporate citizen.

12.12 CONCLUSIONS

As of February 1988, OWMC has committed itself to some of the impact management measures described above; confirmation of the impact management measures to be implemented is subject to cabinet approval. Other impact management measures recommended by OWMC consultants are under consideration, but have not received OWMC commitment at this time. Table 12.3 indicates the status of the impact management measures suggested above. Details of these various measures can be found in Volume V, Site Assessment, of the OWMC Environmental Assessment (1988).

TABLE 12.3
STATUS OF IMPACT MANAGEMENT MEASURES FOR SOCIAL IMPACTS

RESIDUAL IMPACTS

OWMC Commitment

- mitigation of nuisance impacts
- property value protection program
- special case policy
- complaint procedure with third party involvement
- monitoring of nuisance impacts

No OWMC Commitment

- cash payments for residual impacts[1]
- opportunity to relocate

PROPERTY VALUES

OWMC Commitment

- property value protection program
- monitoring of property value in the local community and along the access route

CONCERN FOR HEALTH AND SAFETY

OWMC Commitment

- financial security and mechanisms for resolving claims (liabilities, small claims and long-term environmental impairment)[2]
- comprehensive, multidisciplinary monitoring program
- monitoring committee with third party involvement
- regular public release of monitoring data
- monitoring of well-water and surface water (for individual properties within a pre-determined zone)
- employee training and upgrading
- community review of operations and response to mishaps
- establish an emergency response plan
- public information programs
- facility newsletter
- facility tours

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1. OWMC's 'Special Case Policy' may apply in some of these cases; for more detail, see Ontario Waste Management Corporation, Background Material for the Ontario Waste Management Corporation - Phase 4B Public Consultation Site Assessment Meetings. 1987, Section 14.4 or Ontario Waste Management Corporation 1988.
2. See Ontario Waste Management Corporation, 1987, Section 14.3, for more detail, or Ontario Waste Management Corporation, 1988.

Table 12.3 continued

- maintain liaison with industry and government officials re: waste production and policies
- visitor centre

CONCERN FOR HEALTH AND SAFETY - TRANSPORTATION

OWMC Commitment

- financial security and mechanisms for resolving claims (liabilities, small claims and long-term environmental impairment)
- improvements to signs/signals, pedestrian crossings
- complaints mechanism
- community monitoring committee
- driver training (including emergency response training and procedures to ensure use of designated access route)
- contractual agreements with waste generators and haulers to ensure use of designated access route
- attempt to secure appropriate provincial legislation for formal designation of the access route to allow police enforcement
- monitor accident/spill frequencies for each generator/transporter to detect accident/spill prone shippers
- provision of assistance to municipalities to upgrade their emergency response capabilities
- assist in development of emergency response training
- assist municipality in formulation of and participation in emergency response plan
- ongoing discussion with police, fire and regional officials to monitor transportation experiences
- develop and/or assist with the development of public awareness and education programs concerning emergency procedures applicable to in-transit spills of special wastes

No OWMC Commitment

- ensure emergency response capability along access route (training and equipment for local responders); OWMC will assist, if needed, by providing assistance with training of personnel, selection and acquisition of equipment and provision of technical advice.
- Regional Emergency Response Unit

Table 12.3 continued

OTHER FACILITY-RELATED ACCIDENTS

OWMC Commitment

- financial security and mechanisms for resolving claims (liabilities, small claims and long-term environmental impairment)
- special case policy
- widely disseminated guidelines for small claims

COMMUNITY CHARACTER/SATISFACTION WITH COMMUNITY AS PLACE TO LIVE

OWMC Commitment

- cooperate with local/regional officials to meet plans and policies
- maintain unused OWMC lands in agriculture
- establish comprehensive, multidisciplinary monitoring program to extend over site life and post-closure phases (would include biophysical and socio-economic factors)
- regular public release of monitoring data
- undertake ongoing discussions with OMAF and the Federation of Agriculture to ensure produce marketability

No OWMC Commitment

- research and development centre

EMERGENCY PREPAREDNESS

OWMC Commitment

- maintenance of on-site emergency response teams
- development of facility emergency response plan
- provide assistance to municipalities to upgrade their emergency response capabilities (equipment and training) and plans; provide technical advice
- establish public awareness program
- initiate discussions to develop an agreement of cooperation between the municipalities, the Region of Niagara and OWMC with respect to emergency response
- regular review and upgrading of emergency response plan and procedures
- participation in regular exercises to practise emergency response
- training of truck drivers and site employees in emergency response
- implementation of measures to ensure quick identification of materials involved in an emergency on-site or along the access route

Table 12.3 continued

No OWMC Commitment

- Regional Emergency Response Unit

MONITORING

OWMC Commitment

- establish comprehensive, multidisciplinary monitoring program to extend over site life and post-closure phases
- establish monitoring committee with third party involvement
- establish a joint OWMC/Community Monitoring Committee involving representatives of the Township of West Lincoln, the Regional Municipality of Niagara, community residents, government agencies and public interest groups
- regular public release of monitoring data
- pre-operational monitoring to establish baseline conditions

No OWMC Commitment

- catalytic role in bringing together appropriate agencies to perform health studies (OWMC is committed in principle to monitor off-site wells)

CHAPTER 13
DECOMMISSIONING AND POST-CLOSURE

13.1 INTRODUCTION

The impact assessment of OWMC's proposed hazardous waste management facility at the preferred site includes consideration of decommissioning and post-closure activities. The decision to decommission will be made when the proposed facility reaches the end of its useful life (for example, when treatment processes become obsolete, demand for the services is reduced or equipment is aging). Decommissioning, or the process of taking the site out of operation, involves planned closure, as opposed to mothballing, partial closure or abandonment. Post-closure refers to the long-term maintenance and monitoring of the site following decommissioning.[1]

The Province of Ontario's guidelines for the decommissioning of industrial plants identify the following objectives of decommissioning: to identify any on-site contamination and take appropriate remedial action; protect the environment; and ensure that the end use of the site is compatible with surrounding land uses. These objectives are in keeping with OWMC's goals of minimizing risk to human health and minimizing environmental impacts. Decommissioning and post-closure activities are the final step in the process of implementing OWMC's mandate to manage hazardous wastes and as such, OWMC's goals apply to them as well.

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[1] Refer to Monenco Ltd., Site Assessment, Phase 4B: Facility Characteristics. 1988 for further details on decommissioning and post-closure.

The closure of the facility will result in changes in the social environment. With the cessation of facility and site operations, some social impacts will no longer occur, while others will change. The decommissioning and post-closure activities (e.g., dismantling of the buildings, rehabilitation of the site) could create new social impacts. The social impacts which might be expected are discussed in this chapter along with the steps that OWMC should consider to manage the impacts and the principles which should guide OWMC's response.

Since the date of decommissioning is unknown (other than it will be at least 20 years from initial operation), it is difficult to establish the social conditions which would prevail at the time in the local community. Also, it is premature for details to be available on decommissioning and post-closure activities. Consequently, the discussion that follows is general in nature. However, the discussion identifies probable social impacts and areas of concern which can be used to guide the planning and implementation of decommissioning and post-closure and responses which OWMC should consider.

13.2 ASSUMPTIONS

To assist in the discussion, the following assumptions have been made:

- The current Official Plan for the Township of West Lincoln envisions that the area in the vicinity of the preferred site will remain rural-agricultural in nature. No significant deviations from this are anticipated at the time of decommissioning.
- Decommissioning activities of dismantling of buildings and reclaiming the landfill and central operations area are assumed to occur over a short time period.
- The land use on-site following closure is assumed to be compatible with surrounding land uses and the character of the area.

13.3 DECOMMISSIONING

Decommissioning involves the dismantling and removal of buildings, removal and clean-up of any contaminated areas and development of plans for monitoring, maintenance and the future use of the site (post-closure). The program of decommissioning will result in changes in the social impacts. As plant and site operations cease, some social impacts would be eliminated or reduced; there will no longer be disruptions due to noise and dust from plant and landfill operations and truck traffic. With no truck deliveries (of hazardous waste and process materials such as additives and reagents), any effects associated with the truck traffic would no longer be experienced by residents and community and recreation features located along the access route. As the plant is dismantled and the landfill and central operating areas graded and revegetated, the visual character of the site would become more compatible with the surrounding landscape. Night lighting would be limited to that required for security purposes only.

While many of the social impacts associated with the facility operations will no longer occur or will be reduced in magnitude, a number of impacts related to decommissioning could be introduced. The potential impacts would fall largely into three categories: disruptive types of impacts (disruption of day-to-day activities and disruption of operations of community and recreation features) resulting from activities associated with the dismantling of buildings, grading and reclaiming of the landfill and central operations area, and any remedial actions of contaminated areas; impacts on OWMC employees and their families resulting from the loss of jobs and the possible need to move to find new employment; and impacts on the community (stability, cohesion, character) and community and recreation features (loss of demand) due to any out-migration of OWMC employees in search of new jobs.

The first category of impacts, disruption of day-to-day activities and/or the use and enjoyment of property and disruption of operations of community and recreation features, would be similar to those associated with construction activities, including disruption due to noise and dust from trucks and heavy equipment. The magnitude of the impacts would be comparable to that of construction activities and the duration relatively short-term, i.e., the time required to complete the dismantling of buildings, reclaim the site and undertake any remedial actions.

An estimated 151 employees directly employed by OWMC, including 60 in West Lincoln, will require new jobs (Morehouse Economic Planning Consultants 1987)[1]. The social implications are two-fold: for the employees and their families, and for the community. The significance of the social impacts will depend upon a number of circumstances, some of which OWMC could influence. The amount of lead time and notice given to employees and the community, the manner in which jobs are phased out and the assistance offered to employees in finding new positions and/or retraining will influence the difficulties experienced. The prevailing employment and economic conditions in the local community and Niagara Region, will determine the availability of employment, the ease in which OWMC employees obtain new positions and the need to move outside the area for new employment. For some households, the search for a new job may require moving from their community resulting in a potential loss of support and ties to a familiar surrounding at a time when these are most needed. The characteristics of the employees and their families and their attachment to place will influence the difficulties they encounter. Difficulties may be especially significant for long-term residents - for example, those who lived in the local community prior to the development of the OWMC facility - who may find it necessary to leave the area to obtain new employment.

The number of resident employees who must, or choose to, leave the area for new employment and their involvement in the community could have implications for the stability and cohesion of the area and the use of local community and recreation facilities. The degree of impact would be determined by the number of residents who leave and their involvement in the community and use of local facilities and any in-migration of new residents which occurs to replace OWMC employees who leave. However, not all OWMC employees are expected to live in West Lincoln and the local community, and of those who do, not all will move; consequently, it is unlikely that out-migration will be significant.

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[1] These values represent employment levels at the 150,000 t/a level of operation.

By way of comparison, the social implications of lost employment due to closure of the OWMC facility will be less severe than those experienced by isolated communities whose economic base and residents' welfare are dependent upon one industry.

13.4 POST-CLOSURE

Post-closure activities involve the monitoring and maintenance of the site. The potential social impacts of post-closure would generally be limited to the disruption of daily activities and disruption of operations of community and recreation features although the level and extent of disruption would likely be minimal. On-site lighting would be restricted to that required for security. The reclaimed site, consisting of graded revegetated areas, a small storage building required for monitoring and maintenance, and security fencing around the site perimeter, would be relatively visually compatible with the surrounding area. On-site activities are not expected to produce nuisances such as noise, odour or dust and consequently would not result in the disruption of residents' daily activities or disruption of operations of community and recreation features.

It is assumed that the potential redevelopment of the site, possibly after 25 years of closure, would be compatible with surrounding land uses and the goals of the community, and consequently should be in keeping with the character of the area.

Additional disruption could occur should remedial actions be required - on-site and/or off-site - if a problem is identified through the monitoring program. The social impacts could range from disruptions created by corrective actions to broader implications experienced by residents and the community, such as if water supplies are interrupted. Social impacts resulting from the public's responses to any real or perceived risks will depend on the extent of a problem, the speed of response, actions taken and openness with, and involvement of, the public and the assistance provided to those affected. However, given the measures being taken in the selection of the site, the planning and development of the proposed facility, and the planned monitoring program, the likelihood of problems occurring that pose risk to human health and the environment should be minimized.

13.5 IMPACT MANAGEMENT MEASURES

A number of steps can be taken by OWMC to minimize the potential negative effects and enhance the potential positive effects of the decommissioning and post-closure activities. Generally, the measures recommended below reflect and provide a continuation of the impact management measures and policies to which OWMC is committed or which have been recommended to OWMC by its consultants.

13.5.1 DECOMMISSIONING

The following measures are recommended to OWMC for the potential impacts associated with decommissioning.

Potential disruption of day-to-day activities and/or the use and enjoyment of property and the disruption of operations of community and recreation features

The potential impacts associated with the decommissioning activities are comparable to those of construction activities and hence similar impact management measures would be appropriate. In particular, the following measures are suggested for consideration.

- ensure that heavy equipment comply with MOE noise standards;
- restrict decommissioning activities to the daytime shift;
- apply appropriate ground cover and mitigation measures for exposed soil to minimize dust generation;
- provide a mechanism for public complaints to be heard and addressed.

Potential Social Impacts Resulting from the Loss of Employment

Recommended measures to deal with potential impacts resulting from the loss of employment are as follows.

- provide sufficient lead time for employees and the community regarding closure to allow for enough time to make appropriate plans and adjustments;

- provide assistance to employees in obtaining new jobs. Assistance could include time off for interviews, guidance in writing resumes and attending job interviews; an active search by OWMC on behalf of employees for job opportunities and retraining;
- on-going monitoring of employment opportunities and trends;
- where possible, encourage those living in the municipality to stay. For example, by providing assistance in finding employment within commuting distance.

It is also recommended that steps be taken to:

- ensure opportunities for dialogue with the residents and the Municipality regarding the future use of the site so that the end use is consistent with community goals;
- ensure public involvement in the planning for decommissioning and post-closure, including the monitoring program.

13.5.2 POST-CLOSURE

The following measures are recommended to address the potential impacts associated with post-closure.

- establish a mechanism for public review of monitoring results and the monitoring program;
- provide for third party involvement in monitoring activities to ensure independent objective monitoring studies;
- establish a mechanism for public input to decisions regarding remedial actions which affect them or interim measures taken (for example, the provision of a short-term alternative supply of water to nearby farms and residences if present water supply is interrupted);
- establish a fund to ensure that the financial means are available to maintain an on-going monitoring program and fund any required remedial actions;
- respond quickly and in an open manner to any problems or public concerns that are identified;

- apply appropriate measures to minimize the potential for disruption of day-to-day activities and/or the use and enjoyment of property and potential for disruption of operations of community and recreation features, resulting from remedial actions. As the nature of any remedial actions is unknown, specific measures can not be identified. However, the measures would be similar to those recommended for decommissioning activities and construction impacts.

CHAPTER 14

SOCIAL IMPACT ASSESSMENT OF THE OWMC FACILITY IN WEST LINCOLN: CONCLUSIONS

The proposed OWMC facility will create a number of nuisance effects which will directly affect about 50 households. These nuisance effects include noise, dust, odour, lighting and visual impacts, and will affect the residences closest to the site more severely. In addition, the facility may create some minor nuisance effects beyond those households that have been defined as being within the direct impact zone. Households outside that zone and along the access roads will clearly notice OWMC activity as a result of seeing the incinerator stack and/or truck traffic bound for the facility. However, such impacts are expected to be minor and are no different from the impacts related to any industrial development in a community. As indicated in Appendix F, the social impacts experienced during Year 10 (300,000 t/a) operations are not significantly different than for Year 5 (150,000 t/a) operations.

A substantial impact will be the change in the character of the area in the vicinity of the site from that of a rural-agricultural community to one with a major industrial development in its midst. This development will alter the character of the surrounding community and therefore, potentially, the level of satisfaction residents feel toward the community. This impact would be similar to that which any other large industry might have on such a community.

These impacts, both in terms of nuisance effects and change in character may directly affect a few hundred people. Those affected will respond by either moving out or remaining in the community.

From our analysis it is clear that the standard impacts that are predicted from this hazardous waste management facility are not substantially different, and in fact may be less, than those experienced with other large industrial plants or public utilities such as airports or power plants. However, as documented in Chapters 2 and 3, a hazardous waste management facility is a substantially different kind of enterprise which brings with it a whole range of special impacts resulting from fears, concerns and perceptions about the effect of the facility on human health, safety and the community in general. Special impacts have been documented in Chapter 10 and the public concerns and perceptions in Chapter 11.

Dealing with the special impacts is of the greatest importance in the overall assessment of the social impact of the proposed facility. Since the special impacts are the result of individual behaviour based on perceptions, fears and concerns, it is incumbent on OWMC to take all the reasonable steps possible to deal effectively with the perceptions, fears and concerns of the residents. As noted in Chapter 12, it is important that a broad range of impact management strategies be implemented by OWMC in order to minimize the impacts that might occur if individuals and households make decisions about their future in the community based on fears and perceptions about the facility.

It is evident from visits to numerous facilities and discussions with government officials in the vicinity of other facilities that many people do not move as a result of a facility. However, they expressed fear and concern, and tensions were created or heightened within the community. In our view, some people will move as a result of the OWMC facility, most likely those closest to the site who are able to leave because of the OWMC buy-out procedures or property value protection plan and others who are fearful for their health and safety and do not trust OWMC or the government.

On the basis of experience elsewhere and the constraints which may prohibit a household from moving (economic considerations, attachment to the community), it is expected that most households will remain in the local community. Those who do move (in addition to those displaced) will likely be those who are eligible for guaranteed purchase, and perhaps all residents in the direct impact zone who said they would move. Thus, between 15 and 32 households (53 to 125 residents) might leave the local community. This represents between 3% and 5% of the households in the local community, and 1% or less of the households in West Lincoln Township. In addition, some households elsewhere in the local community who were unsure about moving or who feel the facility poses a risk to them may leave. The extent of this type of out-migration is unkown.

If residents perceive that OWMC is not effectively dealing with the perceptions and concerns of the public, or if in the early stages of facility operations there are several failures and/or accidents, other residents may leave as well. How many cannot be predicted, but out-migration can be effectively monitored.

From a social impact perspective, it is desirable to minimize any out-migration of residents; therefore, it is extremely important for OWMC to develop and put in place impact management strategies to deal with public perceptions and concerns and to minimize the number of households that leave the area. Ideally, with a well-designed and well-managed facility, and clear and comprehensive impact management strategies, the only households that would leave the community would be those directly displaced by the facility and its operations.

Given that OWMC has made a commitment in principle to many of the impact measures discussed in Chapters 9 and 12, it is our expectation that most of the households will remain. Most of those who leave will be replaced by households who do not hold the same negative perception of OWMC or the facility. As a result, the net loss in household or population numbers is expected to be minimal. However, it is possible that the new households could impact factors such as community cohesion and character, or affect community services, depending on the needs and characteristics of the new households. This is a circumstance that cannot be predicted but is amenable to monitoring.

Based on the anticipated low household displacement resulting from the proposed development, the limited residual effects from the nuisance impacts, and the expectation that the OWMC commitment in principle to an impact management strategy will evolve into policies and programs that address the resident perceptions and concerns, the OWMC proposal would be acceptable from a social impact perspective.

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Final report

Ontario
Waste Management
Corporation

A provincial crown corporation

Institute of
Environmental
Research Inc.

SITE ASSESSMENT
PHASE 4B:
SOCIAL IMPACT
APPENDICES

Prepared for
The Ontario Waste Management Corporation

Submitted by

Institute of Environmental Research Inc.

March, 1988

LIST OF APPENDICES

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APPENDIX A

COMMUNITY AND AGENCY CONTACTS

APPENDIX A

COMMUNITY AND AGENCY CONTACTS

Included in this Appendix are the following lists of community and agency contacts made during Phase 4B. This appendix is divided into four sections:

- Community and Recreation Features
- Representatives of Community and Recreation Features and Various Agencies
- Local Community Leaders
- Kitchen Table Meetings

COMMUNITY AND RECREATION FEATURES

I. WITHIN THE LOCAL COMMUNITY

- Bethel Community Church
- Bismarck United Church and Cemetery
- Boyle Brethren in Christ Church
- Dufferin Masonic Lodge
- Emmanuel United Church
- Gainsborough Centennial Hall
- Gainsborough Central Elementary School
- Gainsborough Conservation Area (also along the access road)
- Hitchcock Cemetery
- John Calvin School
- Lane Cemetery
- Niagara Regional Sportsmens Guns Club
- Oddfellows Temple
- Riverside Christian Reformed Church of Wellandport
- Riverview Golf and Country Club
- St. Ann's Community Church and Cemetery
- Silverdale Community Centre
- Silverdale Gun Club
- Silverdale United Church
- Smithville District Christian High School
- Wellandport Branch - West Lincoln Public Library
- Wellandport Christian School
- Wellandport Community Centre and Park
- Wellandport Post Office

- West Lincoln Co-op Nursery School

II. ALONG THE PREFERRED ACCESS ROUTE

- Amber Lodge
- Balls Falls Conservation Area
- Damastra Farms
- Gainsborough Conservation Area (also within the local community)
- Gryphon Aviation Inc. (no longer in operation)
- Heritage Village
- Indian Lake Campground
- Lincoln Lodge
- Mennonite Brethren Church
- Pelham Union Women's Institute Centre
- Proposed Trailer Park/Campground
- Rittenhouse Branch - Lincoln Public Library
- United Mennonite Home for the Aged
- Victoria Experimental Farm
- Victoria Tennis Club
- Vineland Co-op Nursery
- Vineland Fire Hall
- Vineland Mennonite Church
- Vineland Missionary Church
- Vineland Pentecostal Church
- Vineland Post Office
- Vineland Public School
- Vineland Station Post Office
- Vineland United Church

- Vineland United Mennonite Church
- Vineland Women's Institute Hall

REPRESENTATIVES OF COMMUNITY AND RECREATION FEATURES AND VARIOUS AGENCIES

PROVINCIAL GOVERNMENT AGENCIES

Victoria Experimental Farm	Mr. W.A. Straver, Executive Officer Horticultural Research Institute of Ontario Vineland Station, Ontario L0R 2E0 (416) 562-4141 Interview: March 11, 1986

LOCAL MUNICIPALITIES

Gainsborough Centennial Hall	Mr. Floyd Killins, Building Custodian (SE Corner of 27 and Vaughn Road) (416) 957-7409 - home Interview: April 8, 1986
Hitchcock Cemetery	Mr. Lawren Nelson Building Inspector West Lincoln Government Office (416) 957-3346 Interview: December 12, 1986
Wellandport Community Centre	Mrs. R. Kuckyt, Caretaker Regional Road 63, Wellandport, Ontario L0R 2J0 (416) 386-9981 Interview: April 8, 1986

SCHOOLS

Gainsborough Central Elementary School	Mr. Jack Shepherd, Principal R.R. #2 St. Ann's, Ontario L0R 1Y0 (416) 386-6223 Interview: March 6, 1986
Vineland Public School	Mr. William Neal, Principal 100 Victoria Avenue Vineland, Ontario L0R 2C0 (416) 526-5211 Interview: March 6, 1986
John Calvin School	Mr. Peter Torenvliet, Principal Station Street P.0. Box 280 Smithville, Ontario L0R 2A0 (416)957-2341 Interview: May 21, 1987
Smithville District Christian High School	Mr. Strobisher, Principal Box 31 Smithville, Ontario L0R 2A0 (416)957-3255 Interview: May 25, 1987
Wellandport Christian School	Mr. W. Thies, Principal R.R. #1 Wellandport, Ontario L0R 2J0 (416)386-6272 Interview: May 25, 1987

CONSERVATION AUTHORITIES

Balls Falls Conservation Area

Ms. Anne Willmot, Resource Planner
Ms. Marie Poirier, Conservation Planner
Niagara Peninsula Conservation Authority
Centre Street
Allanburg, Ontario
L0S 1A0
(416) 227-1013

Interview: March 14, 1986

Gainsborough Conservation Area

Ms. Anne Willmot, Resource Planner
Ms. Marie Poirier, Conservation Planner
Niagara Peninsula Conservation Authority
Centre Street
Allanburg, Ontario
L0S 1A0
(416) 227-1013

Interview: March 14, 1986

PRIVATE AGENCIES

Bethel Community Church

Reverend Richard Snyder
Box 381
West Lincoln, Ontario
L0R 2C0
(416) 526-4475

*Mr. and Mrs. Clifford
Ms. Marilyn Gracey
Elcho Road
Wellandport, Ontario

Interview: March 20, 1986

* Principal contact unable to attend interview - Secondary contacts were respondents.

Bismarck United Church and Cemetery	Reverend Robert C. Plant 10 Pine Grove R.R. #2 Beamsville, Ontario L0R 1B0 (416) 563-7252 Interview: March 13, 1986
Boyle Brethren In Christ Church	Reverend J. Harold Sherk R.R. #3 Wellandport, Ontario L0R 2J0 (416) 386-0044 Interview: April 9, 1986
Damastra Farms	Mrs. Marie Semple (Family member) Mr. Leslie M. Braun (Farm Manager) R.R. #1 Jordan, Ontario L0R 1S0 (416)562-5285 Interview: March 6, 1986
Dufferin Masonic Lodge	Mr. Bill Heaslip, Grand Master R.R. #3 Wellandport, Ontario L0R 2J0 (416) 386-6895 (Home) Interview: April 7, 1986
Emmanuel United Church	Reverend Leonard Ferber Canboro Road Wellandport, Ontario L0R 2J0 (416)774-5238 Interview: March 21, 1986

Gryphon Aviation Incorporated/

Mr. Glen Smith, Owner
16 Centennial Drive
St. Catharines, Ontario
L2N 6A4
(416) 562-5172

Interview: March 11, 1986

Indian Lake Campground

Mr. Don Young, Owner
Regional Road 24 and
Sixteen Road
P.O. Box 197
Fonthill, Ontario
L0S 1E0
(416)892-5622

Interview: March 19, 1986

Lincoln Lodge

Ms. Marianne Snyder
Box 610
15 Rittenhouse
Vineland, Ontario
L0R 2C0
(416)526-4523

Interview: December 10, 1986

Mennonite Brethren Church

Rev. Murray Unruh
Box 1
Regional Road 81 and Glenview Road
Vineland, Ontario
L0R 2C0
(416)562-5142

Interview: March 20, 1986

Niagara Regional Sportsmens
Gun Club Inc.

Mr. John Compton,
Chief Executive Officer
R.R. #1
North Service Road
Jordan Station, Ontario
L0R 1S0
(416)562-5723(Home)

Interview: February 24, 1987

Oddfellows Temple Lodges: Lincoln Lodge 442 Lady Caroline Lodge 262	Mr. Hilden Disher, Recording Secretary R.R. #3 Wellandport, Ontario L0R 2J0 (416) 386-6452 (Home) Mr. Gerald Freure, Member (416) 386-6150 (Home) Interview: March 21, 1986
Pelham Union Women's Institute Centre	Mrs. Robert Porteous, President R.R. 3, Fenwick Vineland, Ontario L0R 2C0 (416)562-5498 Interview: March 19, 1986
Proposed Campground/ Trailer Park	Mr. Lawren Nelson, Building Inspector West Lincoln Government Office (416)957-3346 Interview: December 12, 1986
Rittenhouse Branch Library	Ms. Elizabeth Cummings Chief Librarian c/o Lincoln Public Library First Avenue Vineland Station, Ontario L0R 2E0 (416) 563-7014 Interview: March 13, 1986
Riverside Christian Reformed Church of Wellandport	Paster Joseph Welman R.R. #1 Wellandport, Ontario L0R 2J0 (416)386-6282 (Church) Interview: December 5, 1986

Riverview Golf and Country Club

Mr. John Durbano,
Part-Owner, Manager
R.R. #1
Fenwick, Ontario
L0S 1C0
(416)892-3774

Interview: February 4, 1987

St. Ann's Community Church
and Cemetery

Pastor Allan Epp
Box 116
St. Ann's, Ontario
L0R 1Y0
(416)957-7436

Interview: November 27, 1986

Silverdale Community Centre

Mr. Blake Lane, Caretaker
Intersection of Silverdale and
Sixteen Roads
St. Ann's, Ontario
L0R 1Y0
(416)957-7326

Interview: May 19, 1987

Silverdale Gun Club

Mr. George Miller, Owner
17 Ivy Avenue
St. Catharines, Ontario
L2P 1Y1

Silverdale Sports Centre
R.R. #1
St. Ann's, Ontario
L0R 1Y0
(416) 685-9686

Interview: March 19, 1986

Silverdale United Church

Reverend G. Russell Cook*
R.R. #2
Beamsville, Ontario
L0R 1B0
(416) 563-7527 (Church)

Mrs. Pauline Young
R.R. #1
St. Ann's Ontario
L0R 1V0

Mrs. Alice Freure
R.R. #1
St. Ann's Ontario
L0R 1Y0
(416)563-7014

Interview: March 21, 1986

United Mennonite Home
For the Aged

Mr. Gerhard Thiessen,
Administrator
45 Second Street
Box 430
Vineland, Ontario
L0R 2C0
(416) 562-5543

Interview: March 13, 1986

Victoria Tennis Club

Ms. E. Gray, President
Mr. Robert Martin, Trustee
First Avenue
Box 142
Vineland Station, Ontario
L0R 2E0
(416)562-5073

Interview: March 14, 1986

Vineland Co-op Nursery School

Mrs. Mary Hodgson, President
24 Rittenhouse Road
Vineland, Ontario
L0R 2C0
(located in Vineland Women's Institute
Hall)

Interview: March 20, 1986

* Reverend Cook did not participate in the interview as he felt he had not lived in the area long enough.

Vineland Mennonite Church
and Cemetery

Reverend Harold Nigh
Rittenhouse Road and
Regional Road 8
Box 502
Vineland, Ontario
L0R 2C0
(416)562-5944

Interview: March 26, 1986

Vineland Missionary Church
(Independent Mennonite Church)

Pastor Dennis Anderson
13 Victoria Avenue South
P.0. Box 47
Vineland, Ontario
L0R 2C0
(416) 562-7141

Interview: March 20, 1986

Vineland Pentecostal Church

Pastor Ron Rantamaki
65 Victoria Avenue
Box 55
Vineland, Ontario
L0R 2C0
(416) 562-5693
(416) 562-4693

Interview: March 19, 1986

Vineland United Church

Reverend Meg Grieve
John Street and Victoria Avenue
Box 1
Vineland Station, Ontario
L0R 2E0
(416)562-4515

Interview: March 19, 1986

Vineland United Mennonite Church

Reverend Peter Retzlaff
2nd Street and Church Street
Box 305
Vineland, Ontario
L0R 2C0
(416)526-4422

Interview: March 19, 1986

Vineland Women's Institute Hall

Mrs. Mary Murray, President
24 Rittenhouse Road
Box 166
Vineland, Ontario
L0R 2C0
(416)562-5074

Interview: March 13, 1986

Wellandport Branch West Lincoln
Public Library

Mrs. Gladys Chornohus, Librarian
Mrs. Wends Gerryis, Borad Member
Regional Road 63
Wellandport, Ontario
L0R 2J0
(416)386-6792

Interview: March 20, 1986

West Lincoln Co-op Nursery
School

Mrs. Lucy Vandenberg, Owner
R.R. #2
St. Ann's, Ontario
L0R 1Y0
(416)386-6223

(located in the Gainsborough Central
Elementary School)

Interview: March 6, 1986

LOCAL COMMUNITY LEADERS

INTERVIEW DATE	COMMUNITY LEADERS
March 26, 1987	Mr. Allard Colyn, Mayor Township of West Lincoln
March 26, 1987	Mr. John Schlistra, Alderman Township of West Lincoln
March 26, 1986	Mr. Ted Stratford, Clerk Town of West Lincoln
March 26, 1986	Mr. Don Logan, Planning Consultant Township of West Lincoln
April 24, 1986	Mr. Kamel, Resident, West Lincoln
April 24, 198	Mr. P. Antoniou, Resident, West Lincoln
May 1, 1986	Mr. B. Heaslip, Resident, West Lincoln
May 1, 1986	Mr. and Mrs. K. Beamer Residents, West Lincoln
October 23, 1987	Mr. Jack Shepherd, Principal Gainsborough Central Elementary School, Bismarck (Township of West Lincoln)
October 23, 1987	Mr. Gerald Freure, Member Oddfellows Temple, Wellandport (Township of West Lincoln)
October 23, 1986	Mrs. Lucy Vandenberg, Owner West Lincoln Co-op Nursey School Bismarck (Township of West Lincoln)
October 23, 1986	Mr. William Neal, Principal Vineland Public School Vineland (Town of Lincoln)
October 24, 1986	Rev. Robert Plant Bismarck United Church Bismarck (Township of West Lincoln)

October 24, 1986	Pastor Ron Rantamaki Vineland Pentecostal Church Vineland (Town of Lincoln)
November 27, 1986	Mrs. Barbara Troup Lincoln Women's Study Group Town of Lincoln
December 5, 1986	Mr. Murray Hackett, Clerk Town of Pelham
December 5, 1986	Pastor Joseph Veltman Riverside Christian Reformed Church, Wellandport
February 4, 1987	Mr. Eric Bergenstein, Mayor Town of Pelham
February 4, 1987	Mr. Doug Beamer, Councillor Town of Pelham
February 4, 1987	Mr. Lloyd Tunnicliffe, Councillor Town of Pelham
February 4, 1987	Mr. Ray Conkle, Mayor Town of Lincoln

KITCHEN TABLE MEETINGS

DATE	LOCATION
February 4, 1987	Home of Mr. Roger Miller Pelham
February 11, 1987	Home of Mr. and Mrs. Allan Yungblut Campden (Town of Lincoln)
February 12, 1987	Home of Mrs. Anne Pinnegar Fonthill (Pelham)
March 19, 1987	Home of Mr. and Mrs. Moyer Vineland (Town of Lincoln)

APPENDIX B

DATA ON COMMUNITY AND RECREATION FEATURES

LOCAL COMMUNITY

Date: March 20, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Bethel Community Church (an independent church)
CONTACT:	Rev. Richard Snyder Box 381, West Lincoln, Ontario L0R 2C0 562-4475 Mr. & Mrs. Clifford and Marilyn Gracey (Church members) Elcho Road, Wellandport 386-6839
LOCATION:	S.E. corner of Elcho Road and Gee Road
OWNERSHIP:	Community church
DESCRIPTION:	A sanctuary only
UNIQUE FEATURES:	None
SERVICES:	Sunday service - 11:00 a.m.; Sunday School - 9:45 a.m.
AVERAGE ATTENDANCE:	12-15
MEMBERSHIP TREND:	At a low at this time
CHURCH ACTIVITIES	Wednesday nights - prayer meeting and Bible study Evening services on occasion (e.g., Christmas, Easter)
COMMUNITY USE OF CHURCH:	None
CAPACITY:	125 people
FREQUENCY OF USE:	Occasional use predominates
CATCHMENT AREA:	Within 2-3 mile radius, a few from Welland
TRANSPORTATION:	Car
ALTERNATIVES:	None
FUTURE PLANS:	None
PERCEIVED IMPACT OF OWMC FACILITY:	The church would close if people move from the area due to the OWMC proposal. No one has moved yet, because with decreased property value they can't sell.

CONCERNS AND ISSUES:

The Graceys are hog farmers located southwest of the site at location #61, and have many concerns associated with the OWMC proposal. They are summarized below:

- Given time, waste will leak out of the clay and contaminate the underground water supply.
- Farms are experiencing loss of equity and may have trouble getting bank loans.
- There are a number of free-flowing springs in the area and well levels may drop due to the project.
- OWMC gives as little information as possible and is not telling the full story.
- Concerns about the mafia controlling the OWMC trucking.
- As farmers they have been forced to make bad business decisions because of OWMC. They passed on an offer to buy the property adjoining theirs which they had previously wanted to purchase.
- OWMC's position is that you must prove OWMC is harmful to your farm in order to qualify for compensation.
- They believe OWMC wants opposition to the Victoria St. access route in order to justify the development of a 4-lane highway from the QEW (Beamsville) to the OWMC site.
- They are experiencing a loss of power and control over their lives.
- Don't believe emissions will be 99.9% pure, and think the prevailing winds will blow emissions over the fruit belt.
- They are concerned about associated industry (e.g., hotels, motels) ruining the rural nature of the area.

WHAT CAN OWMC DO ABOUT CONCERNS:

- Compensate farmers for what they have now.
- Examine newer technologies (e.g., plasma arc)

OTHER COMMENTS TO OWMC:

- Why aren't local drilling rigs used rather than rigs from Waterloo?
- Farmers, unlike urban dwellers, cannot easily move locations.
- Dr. Chant doesn't care if there are 1 million signatures against the proposal. He has a single focus. Dr. Chant has not provided an accurate assessment of the German facilities and their impacts.
- Only unskilled locals will be hired.

NOTE:

Rev. Snyder was unavailable for an interview so Mr. & Mrs. Gracey, church members, were interviewed.

Date: March 13, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Bismarck United Church
CONTACT:	Rev. Robert C. Plant 10 Pine Grove R.R. #2, Beamsville, Ontario L0R 1B0 563-8904
LOCATION:	N.W. corner of Regional Road #65 and Hwy. 20 (Bismarck)
OWNERSHIP:	United Church of Canada
DESCRIPTION OF FACILITIES:	Church building with a hall and kitchen. No phone at the Church.
UNIQUE FEATURES:	Historical nature of the Church. Bismarck started services in 1838. The congregation was originally part of the Evangelical Association and conducted services in German.
TOTAL NUMBER OF PARISHIONERS:	51 families belong to the Church
MEMBERSHIP TRENDS:	Stable membership
SERVICES:	Church Service - 11:00-12:00 Sunday Sunday School - 9:30-10:45
AVERAGE ATTENDANCE:	50 people at the service plus 40 with the Sunday School
CHURCH USE OF FACILITY:	Bible Study - Sunday mornings, approx. 12 people Board Meetings - rare, approx. 20 people Ladies Meetings - once a month - evening, approx. 15 people
SPECIAL EVENTS:	Annual memorial Sunday service for the cemeteries
FREQUENCY OF USE:	Occasional use predominates and the Church is used to only 1/4 capacity
GEOGRAPHIC AREA FROM WHICH USERS COME:	Smithville, Bismarck, St. Ann's, Caistor, Wellandport Approx. a radius of 15 km
ALTERNATIVE FACILITIES:	Campden and Smithville
TRANSPORTATION:	Most drive with a few walking
STAFF:	Minister Caretaker (part-time)
COMMUNITY USE OF FACILITY:	- used as a polling booth during elections - very little additional community use of the Church

FUTURE PLANS:	Approval has been given for an addition to the Church hall. The addition will involve 1 classroom, 2 toilet facilities, a well and septic tank, running water for the kitchen. It is hoped that these additions will result in more community use of the facility since there is no other auditorium in the area.
CEMETERIES:	There is a cemetery behind the Bismarck United Church. There is a cemetery across the road from Bethel United Church at Winslow. The Bethel Church is now permanently closed but the cemetery is still in use by the Bismarck Church. Both cemeteries are less than an acre in size and both are in use.
PROMINENT CHURCH MEMBERS:	Mr. Floyd Krick - clerk of session (also head county assessor) 386-6105 (home), Vaughan Road Mr. Roy McCullum - 957-3086 (home), Smithville
PERCEIVED EFFECT OF OWMC FACILITY ON THE CHURCH:	Minister's opinion: may increase congregation with new workers to the area. May lose a few families. Congregation's opinion: unanimously against the proposal. Will reduce property values. Potential water contamination leading to loss of agriculture and moving from the area. Increased truck traffic as a traffic risk as well as a health hazard in case of spills. (Note: the congregation's feelings are not really directed towards the church but rather towards their own properties.)
ISSUES AND CONCERNS:	The Church is close to Highway 20 and thus they might be affected by noise and dust from the increased truck traffic. The increased truck traffic is seen as a hazard as well as a health risk in terms of toxic spills. The Church is also concerned about contamination of surface and underground water from spills. The minister also pointed out that church members are fearful of losing their farms with decreasing property value.
WHAT CAN OWMC DO ABOUT YOUR CONCERNS?	1. Do not transport waste on Sunday. 2. More education on the technology and environmental effects of the proposal.
INTERVIEWER'S OBSERVATIONS AND COMMENTS:	1. Rev. Plant had previously been working in Deep River and is sympathetic to the problems faced by OWMC. 2. Rev. Plant requested information concerning the OWMC technology and the study process. This request was passed along to Leslie Daniels of OWMC.
PERCEIVED EFFECT OF OWMC FACILITY ON THE HALL:	If agriculture in the local area were negatively affected by the facility this would be reflected in the use of the hall.
USERS CONCERNS:	Mr. Killins doesn't have significant contact with the users of the hall and thus doesn't know their feelings about the matter.
WHAT CAN OWMC DO ABOUT CONCERNS:	No suggestions provided
NOTE:	Mr. Killins works for the West Lincoln Roads Department and is located at the maintenance building just behind the Gainsborough Centennial Hall.

April 9, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Boyle Brethren in Christ Church
CONTACT:	Reverend J. Harold Sherk R.R. #3, Wellandport L0R 2J0 386-0038 (home) 386-0044 (church)
LOCATION:	N.W. corner of Boyle Road and Vaughan Road
OWNERSHIP:	Brethren in Christ Church Canada Conference
DESCRIPTION:	Upstairs is the sanctuary. Downstairs is a full basement with kitchen, washrooms and meeting hall. The church also owns a manse in Wainfleet.
UNIQUE FEATURES:	The present church was built around 1901 and moved in 1927 to the present site from Webber Road in Pelham. The Boyle Brethren in Christ Church represents the only known tie to the original Tunker congregation (early name for Brethren in Christ Church) that came from Pennsylvania almost 200 years ago.
TOTAL NUMBER OF PARISHIONERS:	100 people. There are 71 official members.
MEMBERSHIP TRENDS:	It has been steady in the past but the Church has started to see an increase in the past year.
SERVICES:	Sunday worship - 11:00 a.m., Sunday School - 10:00 a.m.; Sunday p.m. worship - attendance 30
OTHER CHURCH SERVICES/ PROGRAMS:	Ladies Fellowship - every other Tuesday, 10:00 a.m. - 8 ladies Bible Study - every Wednesday, 7:30 p.m. - 12 people Boys Club - Friday evenings - 7 boys Youth Groups - every other Saturday, 7:00 p.m. - 12 teenagers The church is also used on an infrequent basis for weddings, meetings, etc.
CAPACITY:	Sanctuary - 125; Basement hall - 100
CURRENT LEVEL OF USE VS. CAPACITY:	Sunday mornings the sanctuary is near capacity. At other times of the week the church and basement are well below capacity.
CATCHMENT AREA:	No more than a 10 mile radius
ALTERNATIVE FACILITIES:	Brethren in Christ Churches in Wainfleet, Welland and Port Colborne
TRANSPORTATION:	Automobile
FUTURE PLANS:	No changes
COMMUNITY USE OF CHURCH FACILITIES:	The church basement is not rented to the community, however, weddings involving non-church members have occurred without charge.

PROMINENT CHURCH MEMBERS:	Donald Bossert (Deacon), R.R. #1, Fenwick L0S 1C0 892-2959 George Janzen (Treasurer), Box 579, Fonthill L0S 1E0 892-8656 Dave Comfort (lives on Vaughan Road near the site), R.R. #2, St. Ann's, L0R 1Y0, 386-6589
PERCEIVED EFFECT OF OWMC FACILITY ON CHURCH	• There is a general feeling of uneasiness and uncertainty amongst the congregation. The church members recognize that the facility has to be put somewhere but they are fearful of what the impacts from the OWMC project will be 10 years down the road. • The minister pointed out that assurances, similar to those being made by OWMC today, have been made in the past in association with similar projects andhave not been fulfilled.
ISSUES AND CONCERNS:	• Will the chemicals put into the ground containment units after • treatment still be of a toxic nature? • Will there be ash fallout from the OWMC facility as has been mentioned in association with past waste management facilities?
WHAT CAN OWMC DO ABOUT CONCERNS:	In terms of compensation and/or mitigation the Minister feels it is difficult to determine compensation or mitigation if you don't know what, if any, harm is being done.

Date: April 7, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Dufferin Masonic Lodge
CONTACT:	Mr. Bill Heaslip Grand Master, Dufferin Lodge R.R. #3, Wellandport 386-6895 (home)
LOCATION:	Canboro Road, Wellandport

In a telephone interview, Mr. Heaslip stated that he felt an interview was no necessary or important. The Lodge meets once a month, ten months of the year (closed July/August). The building is a two-storey wood structure containing a hall and small kitchen. The only other use of the lodge is as a polling station during elections. The lodge is not rented out to other groups. The only potential OWMC related impact on the lodge would be if members moved out of the area.

Date: March 21, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Emmanuel United Church (774-5238)
CONTACT:	Rev. Leonard Ferber Canboro Road, Wellandport L0R 2J0 386-6238 (home)
LOCATION:	Regional Road 63, Wellandport
OWNERSHIP:	United Church of Canada
DESCRIPTION:	Sanctuary, kitchen, basement/hall and rooms. The manse is located on Regional Road 63 west of Regional Road 27 (next door to the Esso station)
UNIQUE FEATURES:	102 years old
TOTAL NUMBER OF PARISHIONERS:	approximately 155
MEMBERSHIP TRENDS:	Declining
SERVICES:	Sunday - 9:45a.m.; Sunday School - 9:45a.m.
AVERAGE ATTENDANCE:	Total of 100
CHURCH ACTIVITIES:	Explorers - Monday night - 10 CGIT - Monday night - 15 UCW - 1/month - 20 Bible Study - occasionally use the church Stewards - 1/month Board Meetings - 1/month
PEAK TIMES:	Sunday morning and Monday evening
CAPACITY:	Sanctuary: 180-200 Hall: 75
LEVEL OF USE VS CAPACITY:	Difficult to answer. In addition to Sundays the Church is used on average 2 nights a week.
CATCHMENT AREA:	Wellandport, Welland, Low Banks, Wainfleet, Dunnville
ALTERNATIVE FACILITIES:	Services: Wellandport Community Hall, Churches in Dunnville, Welland, Fenwick Hall: Community Hall and Oddfellows Hall
COMMUNITY USE OF THE CHURCH FACILITIES:	No regular outside users. After funerals people congregate at the church. UCW provides suppers for other groups several times a year.

TRANSPORTATION: Car and walking.

FUTURE PLANS: No plans for physical expansion, just maintenance. The church wants to increase the congregation's size.

PERCEIVED IMPACT OF OWMC FACILITY: Members may move away, if they can (depressed property values).
Members under stress both in terms of health and economics.

ISSUES AND CONCERNS: Some members feel the OWMC proposal will create a boom situation with more industry being attracted. Others feel the area will become more depressed.
Decrease in community image and loss of rural nature.
Doesn't make sense to put the facility in the fruit belt.
Concerned that facility management will become complacent over time.
How will the trucking routes and spills be policed?
The unpredictable nature of the local weather makes the likelihood of truck accidents higher.
Concern about zoning changes in the area due to the OWMC project.
Will more industry follow?
Decrease in property values.
Concern about health and environmental damage due to emissions and spills.

WHAT CAN OWMC DO?

1. Use more innovative technologies. The selected technology is already outdated.
2. Look at a larger study area and for a longer period of time.
3. Have those who managed the sites in Germany come here to run this facility.
4. Provide policing of the site.

NOTE: There is a general feeling that OWMC is single-minded and willing to simply let the chips fall where they may.

Date: April 8, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Gainsborough Centennial Hall
CONTACT:	Mr. Floyd Killins Building Custodian 957-7409 (home)
LOCATION:	SE corner of Regional Road 27 and Vaughan Road
OWNERSHIP:	Township of West Lincoln
GENERAL DESCRIPTION:	A small one room former schoolhouse with washrooms. There is no phone
UNIQUE FEATURES:	None
HOURS/SEASONS OF OPERATION:	Year-round
PROGRAMS/ ACTIVITIES:	- no official programs or activities. The hall is used for meetings by various groups such as: the Milk Board (1-2/month), Jr. Farmers and the Ministry of Agriculture. The facility is also used for showers, baseball registrations (2 days/week for 3 weeks in the spring), and for training sessions.
PEAK TIME OF USE:	Winter season
HALL CAPACITY:	40-50 people
CURRENT LEVEL OF USE VS CAPACITY:	Not available. Mr. Killins estimated that the hall is used 5-6 times a month.
NUMBER OF USERS:	Not known. There is no staff for the hall and Mr. Killins acts as the custodian, taking bookings and opening the building for users. He didn't feel he could make a realistic estimate of the number of users.
LEVEL OF USE OVER PAST 3 YEARS:	Stable number of bookings
CATCHMENT AREA:	Township of West Lincoln
TRANSPORTATION:	Automobile
FUTURE PLANS:	No changes
ALTERNATIVE FACILITIES:	Private homes

PERCEIVED EFFECT OF OWMC FACILITY ON THE HALL: If agriculture in the local area were negatively affected by the facility this would be reflected in the use of the hall.

USERS CONCERNS: Mr. Killins doesn't have significant contact with the users of the hall and thus doesn't know their feelings about the matter.

WHAT CAN OWMC DO ABOUT CONCERNS? No suggestions provided

NOTE: Mr. Killins works for the West Lincoln Roads Department and is located at the maintenance building just behind the Gainsborough Centennial Hall.

Date: March 6, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Gainsborough Central Elementary School
CONTACT:	Mr. Jack Shepherd (Principal) 386-6223 (school)
SCHOOL BOARD:	Lincoln County Board of Education
LOCATION:	Highway 20, Bismarck Mailing Address: R.R. #2, St. Ann's
DESCRIPTION:	19 classrooms, 1 library, 1 gym
GRADES:	Junior Kindergarten to Grade 8
ENROLMENT:	Capacity: 500 Present: 379 (January 31, 1986) Projected: no change Trends: stable enrolment
ALTERNATIVE SCHOOLS:	Caistor, Campden, Smithville
STAFF:	Administrative: 3 (principal, vice-principal, secretary) Teaching Full-time: 15 Teaching Part-time: 3 (2 French, 1 music) Occasional: counsellor once a week
SPECIAL EDUCATION PROGRAMS:	3 learning disability classes Students are integrated Alternatives: Beamsville, Caistor (primary special education)
COMMUNITY USE OF FACILITIES:	Users: Ladies volleyball (once a week) in the evening; Brownies (once a week) in the evening Users come from the local area, Vineland and Pelham
CURRENT LEVEL OF USE BY COMMUNITY:	One-third of capacity
FUTURE PLANS:	No changes
PERCEIVED EFFECT OF OWMC ON REGULAR OPERATIONS:	• Several families moved as a result of the OWMC announcement. • There is a need for a contingency plan in case of accidents associated with the OWMC facility.
HOME AND SCHOOL:	There is no formal home and school association. Key parent contacts: Mrs. Freure, Wellandport, 386-6433; Mrs. Denning, Fenwick, 386-6752; Mrs. Moore, St. Ann's, 562-4928
EMERGENCY PLANS:	• Snow emergency plan in place. • Talked with bus people concerning the need for waste site emergency plans but nothing done as of yet.

CONCERNS OF USERS/ PARENTS:	• Skepticism about OWMC'S expertise. They don't feel Dr. Chant is trying to con them but that there is a basic lack of knowledge regarding toxic waste facilities. • Major concern is toxic spills near the school and the need for emergency plans to deal with such an incident. • Concern about the possible long-term health effects on the children. 5 Grade 6 students have formed a group (Toxic Waste Busters) and have been circulating pins, posters and petitions in the school.
POSSIBLE OWMC RESPONSE TO CONCERNS:	There is really nothing OWMC can do to reduce skepticism. The trip to Germany arranged by OWMC was viewed as a positive action.

Date: March 14, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Gainsborough Conservation Area
CONTACT:	Ms. Anne Willmot, Resource Planner Ms. Marie Poirier, Conservation Planner Niagara Peninsula Conservation Authority, Centre Street, Allanburg, L0S 1A0 227-1013
LOCATION:	SE of Hwy 20 and Regional Road 24. 1/4 mile from access route
OWNERSHIP:	Niagara Peninsula Conservation Authority
GENERAL DESCRIPTION:	a 16.19ha site which includes the central workshop of the Authority as well as forest and wildlife areas. The workshop includes a building to house equipment and a maintenance yard.
UNIQUE FEATURES:	Wildlife areas
PROGRAMS/ACTIVITIES OFFERED:	None
SPECIAL EVENTS/ PROGRAMS:	None for recreation. There is a woodlot management program.
HOURS/SEASONS OF OPERATION:	Year-round but not promoted as a recreation area.
AVERAGE NUMBER OF EMPLOYEES:	11 people are based there at the office - 2 people work on the site on a regular basis - summer employment - up to an additional 20 workers
RECREATION USER PROFILE:	- there are unmarked trails that the public may use - there is no way of knowing how many people use the facility for recreation - a profile of recreation users is not available
ALTERNATIVE FACILITIES:	Chippawa Creek Conservation Area in Wainfleet
FUTURE PLANS:	No plans for change
IMPACT OF OWMC ON REGULAR OPERATIONS:	- increased traffic could lead to an increase in animal deaths - the flora and fauna would be sensitive to any local toxic spill - truck noise would affect the animals - general negative impact on the area as a natural setting - fear of spin-off developments encroaching on the conservation area
WHAT CAN BE DONE?	Through planning regulations, ensure a buffer zone around the Conservation Area to protect it from development that may be attracted to the area by the OWMC proposal.

Date: May 21, 1987
Interviewed by: M. McQuiston

FACILITY NAME:	John Calvin School
CONTACT:	Mr. Peter Torenvliet (Principal) 957-2341
LOCATION:	Station St., P.O. Box 280 Smithville, Ontario
DESCRIPTION:	9 classrooms; 1 gym
GRADES:	1-8
ENROLMENT:	Capacity - 300; Present - 240; Projected - 260 within 6 years
TRENDS:	Increased enrolment
ALTERNATIVE FACILITIES:	Public schools
STAFF:	10 full-time teachers; 1 part-time secretary; 1 janitor
SPECIAL EDUCATION PROGRAMS:	1 class subdivided into 7 levels
CATCHMENT AREA:	Haldimand-Norfolk, Wainfleet, Ridgeville, Fonthill, Vineland, Grimsby, West Lincoln
BUSSING:	90% of students are bussed;6 buses in morning (share with high school); 4 buses in evening; bus routes to each of the catchment areas
COMMUNITY USE OF FACILITIES:	Playground used for soccer (60-70 children) and baseball (20 children) 3 nights a week. School used for religious studies 4 nights a week (40-50 teenagers).
FUTURE PLANS:	Addition will be made to school; still in planning stages, no details available.
PERCEIVED IMPACT OF OWMC ON REGULAR OPERATIONS:	Haven't given much thought to impacts but don't know if parents will want children on buses for safety reasons (i.e., conflict with trucks and buses).
WHAT CAN BE DONE ABOUT THIS:	• Can't they helicopter the waste in, as OWMC doesn't seem to be too concerned with money? • OWMC must make sure that access routes are identified with signs and that the use of the access route is enforced.
CONCERNS OF USERS AND PARENTS:	Same as above. • Concern re: fallout from stack and odours. • Need better technology, a solution would be plasma arc technology. • Lack of political clout. • It would be easy for him to move but not so easy for farmers.

INDICATORS OF COMMUNITY IMPACTS:	• He expects there to be positive industrial and commercial spin-offs. • A large percentage of the population is situated downwind from the facility - OWMC must talk about emissions in terms of real numbers rather than percentage points which are deceiving. • Agricultural business will be impacted.
SOCIAL AND COMMUNITY STRUCTURE:	Within the past 10 years many people have moved to West Lincoln because they like the rural character; this lifestyle will be threatened.
COMPENSATION/ MITIGATION:	• Put "Hazardous Waste Route" signs on access road. • Information from OWMC should be in layperson's terms, but not too simple.
FEELING TOWARDS OWMC:	• OWMC is "grandstanding and posturing". • People want to know what kind of hazardous waste will be brought to the facility; is OWMC afraid to tell people?

Date: February 24, 1987
Telephone Interview by:
V. McCulloch

FACILITY NAME: Niagara Regional Sportsmens Gun Club Inc.

CONTACT: John Compton, Chief Executive Officer
R.R. #1 North Service Road
Jordan Station, Ontario L0R 1S0
562-5723 (home); 682-4772 (work)

LOCATION: 4th Concession Road, Assessment Roll #10-240, approximately 1 mile NW of the site

OWNERSHIP: Member-owned, incorporated club.

GENERAL DESCRIPTION: 27 acres of land, clubhouse, and covered shooting facilities for rifle, shotgun, and pistol shooting.

UNIQUE FEATURES: None

PROGRAMS/ ACTIVITIES: Used by club members for shooting practice, as well as a number of other organizations including the Ontario Provincial Police (as a training facility).

The club offers organized events throughout the year, with somewhat less activity in the winter. Organized shoots are held at least every two weeks, with informal events every weekend in the summer.

HOURS/SEASON OF OPERATION: Year-round, mostly weekends

PEAK SEASON: Summer months

STAFF: Volunteers - no full-time paid employees

CAPACITY: 375-500 members

CURRENT LEVEL OF USE VS CAPACITY: Presently 127 paid members. On weekends, the average use is 30-45 people a day; weekdays the average is 6-10 a day.

AGE GROUPS SERVED: Cross-section between 18-70 years.

LEVEL OF USE OVER PAST THREE YEARS: Constant

CATCHMENT AREA: Membership from entire Niagara Peninsula, also Hamilton (5), Mississauga (1)

TRANSPORTATION: Private automobile

ALTERNATIVE FACILITIES: Silverdale Gun Club

FUTURE PLANS: New clubhouse

PERCEIVED EFFECT OF THE OWMC FACILITY:	• Do not expect any negative effects; personally welcomes it, and sees a possible positive effect on the club (in terms of diverting attention from it) • Expressed concern that stray bullets might strike storage tanks at the site, or that a railway spur line to the site would pass by close to the Club's facilities. • Members have expressed concern not directly related to the Club's operation, e.g., spills.
WHAT CAN OWMC DO ABOUT THESE CONCERNS:	Clarify whether stray bullets or railway spur line will pose a problem for the Club.

Date: March 21, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Oddfellows Temple (Lincoln Lodge 442 and Lady Caroline Lodge 361)
CONTACT:	Mr. Hilden Disher, Recording Secretary R.R. #3, Wellandport, Ontario L0R 2J0 386-6452 (home) Mr. Gerald Freure, Member 386-6150
LOCATION:	Regional Road 63, Wellandport
OWNERSHIP:	Wellandport Holding Company Mr. Gerald Freure
DESCRIPTION:	2 halls (upstairs and down); kitchen; washrooms
UNIQUE FEATURES:	None
MEETINGS:	Oddfellows: 1st and 3rd Thursday of the month Lady Caroline: 2nd and 4th Wednesday of the month About 24 attend each meeting The Lodge is closed in July and August
LODGE ACTIVITIES:	Annual fish fry approximately 800 people Special Lodge events approximately 2/year - 75-80 people
OTHER USERS:	The hall is rarely rented out, due in part to the fact it has no liquor license. The Independent Order of Foresters rent the hall for meetings once a month.
CATCHMENT AREA:	An 8 mile radius
CAPACITY:	150 (can seat approximately 100)
LEVEL OF USE VS CAPACITY:	25% and has been stable
ALTERNATIVES:	Wellandport Community Centre
TRANSPORTATION:	Car
FUTURE PLANS:	None
PERCEIVED IMPACT ON THE LODGE:	None
WHAT CAN OWMC DO:	Provide compensation to property owners (discount in taxes). Build a community centre, library, sports facility, or fire hall.

OTHER COMMENTS TO OWMC:	There will be a loss of agricultural identity. Those closest to the site (those in the direct impact zone) are and will be affected most. Concern about Mafia involvement in the trucking business
NOTE:	Mr. Freure owns a century farm in the buffer zone and is a former Council Members. He has encouraged local farms to appeal their assessments and use their political power to be heard (e.g., a protest vote).

Date: December 5, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Riverside Christian Reformed Church of Wellandport

CONTACT: Pastor Joseph Veltman
R.R. #1, Wellandport (mailing address)
L0R 2J0
386-6282 (Church); 386-6866 (home)

LOCATION: Wainfleet (outside of study area - the other side of Chippawa Creek)

OWNERSHIP: Owned by the congregation

DESCRIPTION: Sanctuary with an educational wing and fellowship area

TOTAL NUMBER OF PARISHIONERS: Approximately 500

MEMBERSHIP TRENDS: Stable

SERVICES: Sunday 10:00 a.m. and 2:30 p.m.
Evening services in the summer

AVERAGE ATTENDANCE: 400-450

USE OF CHURCH FACILITY: Sunday School - Sunday
Boys and Girls Club - Friday evening
Youth Group - Sunday evening
Bible Study - Tuesday mornings and one evening a week
Senior Citizens Recreation - 1 day/week
Choir/Band Practices

CATCHMENT AREA: Within a 5 mile radius

ALTERNATIVE FACILITIES: Daughter churches in Dunnville, Smithville, Welland and Fenwick.

CAPACITY: Educational wing - 100

LEVEL OF USE: The church's facilities are used 6 evenings a week

COMMUNITY USE OF THE CHURCH: The affiliated school next door holds a class in the church every day.

TRANSPORTATION: Private automobile

FUTURE PLANS: None

PERCEIVED EFFECTS OF OWMC FACILITY:

- People will get sick. People may want to move but they won't because they lack the economic resources.
- The congregation may become split over the issue but he has seen no sign of this as of yet.

POSSIBLE RESPONSES BY OWMC: Assist residents in relocating if they want to move because of the landfill.

CONCERNS EXPRESSED BY PARISHIONERS:	Very quiet, almost none.
NAME OF GROUP LEADERS:	Ralph Boverhof R.R. #2, St. Ann's 386-6954 Jack Heida 892-4560 Pierre Sjaarda 386-6568 Wellandport

Date: February 4, 1987
Interviewed by: V. McCulloch

FACILITY NAME:	Riverview Golf and Country Club
CONTACT:	John Durbano (part-owner, manager) R.R. #1, Fenwick, Ontario L0S 1C0 892-3774
OWNERSHIP:	Durbano Construction - partnership between John Durbano and his father.
LOCATION:	Regional Road 24 and Chippawa River.
DESCRIPTION:	18-hole golf course, banquet hall, lounge, coffee shop, pro shop (in season); peak use between May and September. Some cross-country skiing in winter (off-season).
STAFF:	3 full-time; 12 part-time/seasonal
CATCHMENT AREA:	Members - Welland, Pelham, St. Catharines, Port Colborne. Non-members - local area, as well as Americans and tourists from the Niagara Falls area.
CURRENT LEVEL OF USE:	400 members (approximately 100/day in season); 18,000 'green-fee' players over season
TRENDS IN USE:	Could handle an increase of 40% in both member and 'green-fee' players. The club has experienced growth in the past three years, but this is expected to level off.
TRANSPORTATION:	Private automobiles
ALTERNATIVE FACILITIES:	Highlands, Westbrook, Peninsula Lakes, Lookout Point, Sawmill golf courses
PERCEIVED IMPACT OF OWMC FACILITY:	Hard to say; people will identify the facility as being nearby; won't affect membership levels
MEMBERS:	A number of individuals have expressed general concern not related directly to club.

Date: May 19, 1987
Telephone Interview by:
V. McCulloch

FACILITY NAME:	Silverdale Community Centre
CONTACT:	Blake and Etta Lane, caretakers
LOCATION:	Intersection of Silverdale and Sixteen Roads
OWNERSHIP:	West Lincoln Township
DESCRIPTION:	Former schoolhouse, with kitchen and basement
UNIQUE FEATURES:	None
PROGRAMS/ ACTIVITIES OFFERED:	Rented for stags, showers, Junior Farmers and Wheat Board meetings, card parties, funeral receptions.
HOURS/SEASONS OF OPERATIONS:	Used steadily year-round; mostly in evening; 6 to 8 times a month.
AVERAGE NUMBER OF FULL-TIME/PART-TIME EMPLOYEES:	All volunteers; Pauline Young - bookings, Lanes - caretaking.
USER PROFILE:	The groups described above; mostly adults. Can't give a general description as characteristics vary with each meeting.
CAPACITY OF USE:	About 120 people; 100 at a meal.
CURRENT LEVELS OF USE VS CAPACITY:	Could be used more often.
CATCHMENT AREA:	Silverdale area
TRANSPORTATION:	Mostly automobile
ALTERNATIVE FACILITIES:	None in the local area.
FUTURE PLANS:	None
PERCEIVED IMPACTS OF OWMC FACILITY:	• If people leave the area, the facility may be used less often. • Concern about contamination of cistern water. • Mrs. Lane has great personal doubts about the facility.

Date: March 19, 1986
Interviewed by: C. Rattle

FACILITY NAME: Silverdale Gun Club

CONTACT:
Mr. George Miller (Owner)
17 Ivy Avenue
St. Catharines, Ontario L2P 1Y1
685-9686

LOCATION:
NW 1/4 Lot 16
Concession Road 4
West of Silverdale Road
Address: Silverdale Sports Centre, R.R. #1, St. Ann's, L2P 1Y1

OWNERSHIP: Private (Mr. G. Miller)

DESCRIPTION:
- 50 acre property
- Facilities for rifle, shotgun and pistol shooting including 25, 50, 100 and 200 yard shooting ranges
- Archery range, horseshoes, darts
- Camping (no hookups or services; used primarily during special provincial shoots)

UNIQUE FEATURES:
- Largest range in southern Ontario (200 metres)
- Largest muzzle loading club in Ontario

PROGRAMS/ACTIVITIES:
- Used by club members and general public for pistol, rifle, shotgun practice as well as other organizations including the local militia and Boy Scouts
- Club offers organized events/matches throughout the year

SPECIAL EVENTS/ PROGRAMS:
Championships, including Golden Horseshoe championships, Metallic Silhouette Provincial Championships, Ontario Muzzle Loading Association (OMLA) Championships, OMLA Silhouette and Regional Championships; trapshooting - monthly shoots; safety course

HOURS/SEASONS OF OPERATION:
Shooting - sun-up to sun-down. Open 7 days a week for club members, Saturday and Sunday for the public. Facilities open year-round, matches held year-round.

STAFF:
No full-time employees; one part-time trapboy. Work is voluntary, undertaken by committees of members

USER PROFILE:
- Club members
- General public
- Local Militia, Boy Scouts - 5% total users
- Age Groups served:
  5% - less than 20 years
  20% - 20-30 years
  50% - 30-60 years
  25% - 60+ years

MEMBERSHIP: 1000 members; safety course - 200 members

PEAK USE:	Fall is the busiest time, with 3,000 users over two weeks
CAPACITY:	200 users daily
CURRENT LEVELS OF USE VS CAPACITY	• Average number of users per week - 300 • August, September, October - 100% capacity • Rest of year 60%
CATCHMENT AREA:	Golden Horseshoe area; some users from the United States
TRANSPORTATION:	Automobile
ALTERNATIVE FACILITIES:	• Ha-Ha Club, Hamilton (smaller facility) • Maple Leaf Club (smaller facility; closed Sundays) • Several indoor clubs and trap clubs nearby • No clubs of similar nature and size nearby; nearest is the Kitchener Pioneer Gun Club
FUTURE PLANS:	• A clubhouse is planned and cabin facilities will be updated • Would be interested in using some of OWMC's excavated earth to build safety banks
PERCEIVED EFFECT OF OWMC PROPOSAL ON GUN CLUB:	• Concerned that wildlife will be affected if the facility is not operated perfectly; wildlife already dying in the area because of the use of chemicals and OWMC will add to this • Members are concerned about odours and emissions • Not concerned about water pollution as drainage is away from the Gun Club property • No visual impact expected provided that the facility is attractive • No increased use of Gun Club anticipated
ISSUES AND CONCERNS:	• Supports the idea of a facility to treat hazardous waste • Why not use the plasma arc technology which provides the opportunity to treat the waste at the source? Sees development of portable technology along with OWMC facility • Transportation Spills • Concerned that other industry will be attracted to the area, bringing additional pollution
WHAT CAN OWMC DO:	• Drill wells for residents with cisterns and monitor well water

Date: March 21, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Silverdale United Church
CONTACT:	Rev. G. Russell Cook R.R. #2, Beamsville, Ontario L0R 1B0 563-7527 (church) Mrs. Pauline Young R.R. #1, St. Ann's, Ontario L0R 1Y0 957-3480 Mrs. Alice Freure R.R.#1, St. Ann's, Ontario L0R 1Y0 957-7309
LOCATION:	Corner of Sixteen Road and Silverdale Road (St. Ann's)
OWNERSHIP:	United Church of Canada
DESCRIPTION:	Sanctuary only
UNIQUE FEATURES:	The church is a 'board and batton' structure which is very rare in the area. 122 years old.
TOTAL NUMBER OF PARISHIONERS:	Not available
MEMBERSHIP TRENDS:	Stable
SERVICES:	Joint Congregation with Tintern United Church. Every other Sunday at 11:00 a.m.
AVERAGE ATTENDANCE:	28
USE OF CHURCH FACILITY:	No regular activities except for the Sunday service.
SPECIAL EVENTS:	Christmas and Easter services, a few weddings.
CATCHMENT AREA:	4th Concession to Tintern
ALTERNATIVE FACILITIES:	Bismarck, Tintern, Fenwick
CAPACITY:	100 in the sanctuary
LEVEL OF USE VS CAPACITY:	Sunday - 30%; 0% during the week
COMMUNITY USE OF THE CHURCH:	None

TRANSPORTATION: Mostly by car, a few walk.

FUTURE PLANS: None. There is some concern about the future of the church because of low numbers.

PERCEIVED EFFECT OF OWMC FACILITY: Members may move out of the area resulting in the church closing.

CONCERNS: No church-sponsored meeting was held on the OWMC proposal but many members have expressed concerns. Major concerns are related to emissions from the OWMC facility in terms of air and water pollution and risk to human health. Increased truck traffic will cause more traffic accidents, as well as pose a threat from spills. The proposal will also reflect negatively on the image of the entire area. They fear some members of the church may leave the area.

POSSIBLE RESPONSES BY OWMC:

1. Many of the church members are concerned about their property values and feel they should be compensated.
2. OWMC should listen to the local people. They feel OWMC is not providing straight answers.

OTHER COMMENTS TO OWMC:

1. Take the plasma arc more seriously because it is an at-source type technology.
2. The OWMC proposal would be a risk to the Niagara fruit belt.

NOTE: The Silverdale United Church uses the Silverdale Community Centre for any recreational activities (e.g., dinners, receptions).

NOTE: The interview was conducted with Mrs. Young and Mrs Freure at the suggestion of Reverend Cook, who felt he had not been in the area long enough to comment on the OWMC proposal

Date: May 25, 1987
Interviewed by: M. McQuiston

FACILITY NAME:	Smithville District Christian High School
CONTACT:	Mr. Strobisher, Principal
ADDRESS:	Box 31 Smithville, Ontario L0R 2A0
DESCRIPTION:	11 classrooms; 1 gym; 1 library, 1 shop
GRADE:	9-OAC (13)
ENROLMENT CAPACITY:	Capacity - 200; Present - 200
TRENDS:	Increase over next 4 years to 300
FUTURE PLANS:	No changes to be made within next 4-5 years but there are long range plans to expand.
STAFF:	2 administration; 13 full-time teachers; 2 part-time teachers; 1 1/2 support staff
CATCHMENT AREA:	Grimsby, Beamsville, Fenwick, Dunnville, Welland
BUSSING:	90% of students are bussed. 4 busses in both morning and afternoon (no lunch time buses)
PERCEIVED IMPACTS OF OWMC ON REGULAR OPERATIONS:	Does not foresee any impacts on the school.
CONCERNS OF STAFF/ STUDENTS/PARENTS:	• Farmers are concerned about traffic and environmental pollution. • A study was done by the geography department which showed the need for a waste disposal facility; the report was sent to OWMC. • A balanced attitude is expressed by the school.
COMPENSATION/ MITIGATION:	Caution is needed in terms of traffic and spills.

Date: November 27, 1987
Interviewed by: J. Beckwith

FACILITY NAME:	St. Ann's Community Church
CONTACT:	Pastor Allan Epp Box 116, St. Ann's, L0R 1Y0
LOCATION:	Regional Road 69
OWNERSHIP:	Congregation owned - no affiliation
DESCRIPTION:	Sanctuary, kitchen, modest eating area (capacity: 130), Sunday School classrooms
SERVICES:	Sunday - 11:00 a.m. Sunday - 7:00 p.m.
AVERAGE ATTENDANCE:	Approximately 200 (total)
CHURCH ACTIVITIES:	Evening use predominates (3-4 evenings a week); Wednesday evenings - Bible Study (approximately 30 attend) Friday evening - Young People (approximately 20 attend) Friday evening - Choir (approximately 30 attend) Tuesday morning - Ladies Bible Studies
COMMUNITY USE OF CHURCH:	None
CATCHMENT AREA:	Grimsby, St. Catharines, Wellandport, St. Ann's, Vineland, Beamsville
TRANSPORTATION:	Car
ALTERNATIVE FACILITIES:	Other evangelical churches; Vineland Mennonite Brethren; Beamsville Calvary Church
PERCEIVED IMPACT OF OWMC FACILITY:	• Three or four families have already moved because they would be downwind from the OWMC facility. Other families probably will move. • While he sees no direct impact he feels it has had a moderate impact on members, having "put a damper on things". • The OWMC facility is a big topic amongst church members and has caused fear, much emotion, and mistrust.
WHAT CAN OWMC DO:	Guarantee property value for residents.

Date: March 20, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Wellandport Branch, West Lincoln Public Library (386-6792)
CONTACT:	Mrs. Gladys Chornohus (Librarian) R.R. #2, St. Ann's 386-6327 Mrs. Wenda Gerryts (Board Member) R.R. #3, Wellandport 386-6448
LOCATION:	Regional Road 63 just east of Regional Road 27 (Wellandport)
OWNERSHIP:	Mr. Charles Collins owns the building in which the library is situated.
DESCRIPTION:	Library is one room (780sq.ft.) in the two-storey building.
UNIQUE FEATURES:	None
HOURS:	Tuesday 4-6p.m.; Thursday 7-9p.m.; Saturday 10a.m.-1p.m. Year-round.
PROGRAMS:	None
EMPLOYEES:	2 part-time
PEAK USE:	Saturday 10a.m.-1p.m.
CAPACITY:	10-12 people at a time
LEVEL OF USE VS CAPACITY:	Saturday - 100%(+); Thursday - 100%; Tuesday - 50%
MEMBERSHIP:	750 on the books but many of those represent family cards so there are more members in actuality.
TRENDS:	Greater demand for library services. Circulation has increased.
CATCHMENT AREA:	Wellandport and surrounding farms (Ward 2)
ALTERNATIVE FACILITIES:	Smithville, Fenwick
TRANSPORTATION:	Drive or walk
FUTURE PLANS:	Hope to move into the community centre in the next 2 years. Plans have been passed by Council to have the shell put up for the new 1,000 sq.ft. library. The library would then be able to provide programs.

PERCEIVED IMPACT ON THE LIBRARY: Difficult to anticipate. There may be some drop in membership if people leave the area. If the OWMC trucks were to deviate from the designated access routes this could pose a traffic and health threat.

ISSUES AND CONCERNS:

1. The population may stagnate.
2. Nothing to stop the waste trucks from deviating from designated access routes.
3. Haven't seen any results from the German experiences with similar facilities.
4. Health risk due to emissions from the stack.
5. There will be a negative effect on community image.
6. An agricultural community is not a suitable site for such a proposal. The area does not even benefit from the industry that creates the waste.

WHAT OWMC CAN DO:

1. More research on other 'at-source' technologies.
2. Make industry more responsible for its waste.
3. Develop a means to ensure that the trucks keep to the designated routes.
4. Local citizen involvement in any monitoring.
5. Compensation for property value.

NOTE: OWMC information is provided by the library but is rarely used. The Librarian suggested this was because most area residents have their own copies of the OWMC materials.

Date: May 25, 1987
Interviewed by: M. McQuiston

FACILITY NAME:	Wellandport Christian School
CONTACT:	Mr. W. Thies
ADDRESS:	R.R. #1, Wellandport, L0R 2J0
DESCRIPTION OF FACILITIES:	10 classrooms; 1 gym; 1 library
ENROLMENT:	Capacity - 300; Present - 293
TRENDS:	Growth anticipated
FUTURE PLANS:	School has purchased property in Smithville to build a satellite school. Expect to start classes September 1988 or earlier.
STAFF:	Administration - 2; Teachers - 3 part-time, 10 full-time
SPECIAL EDUCATION:	1 class
CATCHMENT AREA:	Wellandport, Wainfleet, Welland, Smithville, Pelham
BUSSING:	98-99% of students are bussed 5 buses both morning and afternoon (no lunchtime buses) Bus routes to each of the catchment areas
COMMUNITY USE OF SCHOOL:	Gym used an average of once a week. Number of users varies from 15-200. Outdoor facilities not used.
PERCEIVED IMPACTS OF OWMC FACILITY:	Haven't considered this but hope that there won't be any.
CONCERNS OF PARENTS/TEACHERS/ STUDENTS:	• Don't really have any. • When they first considered either expanding the present school or building a satellite school, parents expressed concern about the impact of air pollution and truck traffic from the facility on the existing school but this wasn't the reason why the satellite school location was approved.
INDICATORS OF COMMUNITY IMPACTS:	• There are only negative impacts. • Residents question safety of the increased traffic and the technology used.
COMPENSATION/ MITIGATION:	• Education of the residents is needed but this is being done. • Residents have a hard time understanding technology. • Residents don't believe the statistics given by OWMC because they don't understand them.
FEELINGS TOWARD OWMC:	Believes that a waste disposal facility is needed but West Lincoln is not necessarily the best place.

Date: April 8, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Wellandport Community Centre and Park
CONTACT:	Mrs. R. Kuckyt, Caretaker 386-6741 (home) 386-9981 (Community Centre)
LOCATION:	Regional Road 63, Wellandport
OWNERSHIP:	Township of West Lincoln
GENERAL DESCRIPTION:	Large hall, kitchen, washrooms. Behind the community centre is a baseball field (with lights) and pony track.
UNIQUE FEATURES:	None
PROGRAMS/ ACTIVITIES:	The hall is rented for weddings, stags, showers, dinners, dances, crop displays. Oddfellows - dances once a month Foresters - dances once a month Baseball team has fund-raisers at the Centre Conservation clubs have their annual awards dinners
HOURS/SEASON OF OPERATIONS:	Year-round
PEAK SEASON:	April to November
STAFF:	Mrs. Kuckyt is the only employee
CAPACITY:	225
CURRENT LEVEL OF USE VS CAPACITY:	Difficult to say. Over 100 people often attend the dances. During the peak season the centre is used on average 4 days a week. During the off-season it is used on average 2 days a month.
LEVEL OF USE OVER THE PAST 3 YEARS:	Stable
CATCHMENT AREA:	St. Catharines, Welland, Dunnville, Fenwick, Wellandport, Smithville.
METHOD OF TRANSPORTATION:	Automobile
FUTURE PLANS:	There are plans underway to renovate the kitchen and washrooms and to add a meeting room.
ALTERNATIVE FACILITIES:	Smithville Legion or Arena, Fonthill Legion, the Old Farm Inn Banquet Hall in Smithville

USE OF THE BASEBALL DIAMOND:

- Mens games 2 nights a week (2 games each night)
- Ladies games once a week (2 games)
- Dutch church baseball team once a week

PERCEIVED EFFECT OF OWMC ON THE COMMUNITY CENTRE:

Mrs. Kuckyt didn't provide any specific comments as to how the community centre would be impacted by the OWMC facility, but she did express a number of general concerns and statements about the project. These concerns and statements include:

1. OWMC will be using an outdated technology. Why not try the plasma arc?
2. People want to move but don't think others will buy their homes. She said that a citizens group (the Elcho group she thinks) stated their properties had already dropped 10% in value. She did not know where they obtained this figure.
3. The onus is on residents to prove that OWMC is harmful to them and this is not fair and difficult to do.
4. Dr. Chant has stated that only 1 truck spill will occur every 50 years. Where does he get this number?
5. People working on the OWMC project should have to live there (within a 5-7 mile radius). This would provide OWMC with a vested interest in project safety.
6. The papers say that the German facility is not operating effectively but Dr. Chant denies this. What is the truth?
7. On what experiences (Germany, U.S.A., England)?
8. Money put in trust for the Township by OWMC should only benefit the local area and not Smithville.
9. Dr. Chant is not providing straight answers. He treats the local residents as if they aren't intelligent and tries to avoid the issues.

WHAT CAN OWMC DO ABOUT CONCERNS?

Tell the residents where OWMC is getting its information on which it is basing its calculations regarding the frequency of spills and the purity of emissions.

Date: March 6, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	West Lincoln Co-Op Nursery School
CONTACT:	Mrs. Lucy Vandenberg (owner) Gainsborough Central Elementary School R.R. #2, St. Ann's L0R 1Y0 386-6223 (school)
LOCATION:	Hwy 20, Bismarck
OWNERSHIP:	Mrs. Lucy Vandenberg
DESCRIPTION:	The Nursery School occupies 1 classroom in the Gainsborough Central Elementary School
UNIQUE FEATURES:	None
ENROLMENT:	22
CAPACITY:	25
PROJECTED:	Same as present (22)
TRENDS:	Stable
ALTERNATIVE DAYCARE CENTRES:	Smithville has a daycare centre rather than a nursery school.
STAFF:	Administrative - 1 Other - volunteer support from mothers on a rotating basis (1 or 2 volunteers a day)
DAYS/HOURS OF OPERATION:	Monday to Thursday - half-days (mornings)
CATCHMENT AREA:	St. Ann's, Smithville, Wellandport, Caistor
TRANSPORTATION:	Parents' cars, car-pool
FUTURE PLANS:	If the Gainsborough School requires the room, or if enrolment drops, then Mrs. Vandenberg is prepared to move the Nursery School to Smithville.
PERCEIVED EFFECT ON REGULAR USE:	Parents will move from the area and thus reduce enrolment.

CONCERNS EXPRESSED BY PARENTS:	- Mrs. Vandenberg hasn't spoken to parents about OWMC but she knows that some of the parents have been very involved in public meetings and citizen groups. Two actively involved parents are Mrs. Judy Peacock (Nursery President) and Mrs. Mary-Ellen Courtright. - Mrs. Vandenberg has no serious concerns regarding the OWMC proposal but suggested this is due at least in part to the fact she does not reside in the area. She did express some concern about increased truck traffic as a traffic hazard for cars entering and leaving the school.
POSSIBLE RESPONSES BY OWMC TO CONCERNS:	- OWMC should attempt to educate the people about the proposed facility and provide materials about the facility to the residents.

ACCESS ROUTE

Date: December 22, 1986
Telephone Interview by:
Kay Dryden

FACILITY NAME:	Amber Lodge
CONTACT:	Mr. Brian Lecky Community Housing Hamilton Psychiatric Hospital 388-2511
LOCATION:	Martin Road, Vineland, Ontario Mailing Address: Community Housing Coordination Services Hamilton Psychiatric Hospital Box 585 Hamilton, Ontario L8N 3K7
OPERATED BY:	Ontario Ministry of Health
DESCRIPTION:	Group home for psychiatric patients and mentally retarded individuals with psychiatric conditions.
NUMBER OF RESIDENTS:	11
CAPACITY:	12
FACILITIES:	Recreation facilities
PROGRAM:	Workshops for the mentally retarded with an associated group (West Lincoln M.R.)
ALTERNATIVE FACILITIES:	For the mentally retarded - an independent living program.
AREA SERVICED:	Niagara area.
FUTURE PLANS:	Ministry of Community and Social Services and Ministry of Health are considering takeover of mentally retarded care. Therefore, residents in group home who are mentally retarded with psychiatric problems may be transferred.
PERCEIVED EFFECTS OF OWMC ON REGULAR OPERATION:	Increased traffic on Regional Road 24 would hinder walking activities in winter months.

Date: March 14, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Balls Falls Conservation Area
CONTACT:	Ms. Anne Willmot, Resource Planner Ms. Marie Poirier, Conservation Planner Niagara Peninsula Conservation Authority Centre St., Allanburg, Ontario L0S 1A0 227-1013
LOCATION:	Off of Victoria Ave. just south of Regional Road 73
OWNERSHIP:	Niagara Peninsula Conservation Authority
GENERAL DESCRIPTION:	A 218 acre site promoting a historical theme. A historical village (11 historical buildings and a collection of artifacts, picnic areas and trails are included in this development.
UNIQUE FEATURES:	Niagara escarpment (flora, fauna, geology) Bruce Trail Historic features - remnants of an early 19th century village Twenty Mile Creek 2 natural waterfalls Archeological site - 19th century pottery site which the Royal Ontario Museum is investigating Arboretum
HOURS/SEASONS OF OPERATION:	Museum - open year-round Gate fee charged - May to September
PROGRAMS/ ACTIVITIES OFFERED:	Thanksgiving festival and craft show - Thansgiving weekend, 22,000 people in 3 days Rendezvous of Rose Moon - a historical re-enactment, traditionally the 3rd weekend in June but it now has a doubtful status Historical appreciation - tours provided of the buildings, summer season - school groups can come year-round - considered a community museum - long weekend special pioneer days Nature Trails - school groups year-round - there is an education field centre - nature tours provided - unstructured winter sports Camping - no commercial camping but the Boy Scouts camp year-round on weekends Picnicking (there is a shelter and barbeque pit) Note: There is a church on the property which is used every weekend in the summer for weddings.
STAFF:	One full-time curator Summer - 3 laborers; 2 gatekeepers; 2 security guards; 7 guides
ATTENDANCE:	75-80,000 a year
ATTENDANCE TRENDS:	Increased consistently in the last three years; festival up 3,000/year; use at peak seasons has also increased.

PEAK SEASONS:	May to October
AGE GROUPS SERVED AS PERCENTAGE OF TOTAL USERS:	Under 5 to 18 years - 50%; 19-59 years - 30%; 60+ years - 20%
CATCHMENT AREA:	Local to international Niagara Region - 60%; Golden Horseshoe - 30%; other - 10%
CURRENT LEVEL VS. CAPACITY	35% to 45% of capacity. Exception is the Thanksgiving festival which is at capacity.
ALTERNATIVES:	None
TRANSPORTATION:	Car or bus; there are a significant number of senior citizen bus tours.
FUTURE PLANS:	• They are considering moving Maple Syrup Days to Balls Falls. (three weeks in March). • Want to increase their programs and encourage formal bus tours. • In the near future they will be adding 60 acres located on the northern border of the Area. They are presently custodians of the land. Another 35 acre acquisition is proposed but is of a more long-term nature.
PERCEIVED IMPACT OF OWMC FACILITY:	• Visitors may hesitate to come because of location near the access route. • Psychological effect on users. • The vegetation may suffer as a result of being downwind of OWMC stack. • Loss of park character due to new workers and development in Vineland as a spin-off from the OWMC proposal. • Dust from the trucks would affect the Museum artifacts. • Spills could contaminate 20 Mile Creek which runs under Regional Road 24. • Traffic conflict between vehicles of park users and OWMC trucks. • Especially concerned about risk to school buses turning into or out of the park.
WHAT CAN OWMC DO?	• Increase the safety of the access routes through the use of lights, signs, etc. During the Thanksgiving Festival the overflow cars park along both sides of Regional Road 24. • Perhaps reduce speed limits in the area. Some doubt was expressed as to how successful this might prove. • Better education on the safety of the preferred site. • Produce ongoing monitoring and emergency programs for both social and environmental factors throughout the region. • Have OWMC be a leading force in the passage of legislation regarding emission standards that would include strict enforcement and prosecution. • Have OWMC buy land to create a buffer to keep development away from the conservation area. • Strict enforcement of the 'Spills Bill'. Strict regulation of OWMC truck drivers. • Have a variety of routes to reduce the number of trucks on any one route. • Have trucks avoid the 10 a.m. to 2 p.m. times when school groups are arriving/leaving.

Date: March 6, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Damastra Farms
CONTACT:	Mrs. Marie Semple (family member) Mr. Leslie M. Braun (Farm Manager) R.R. #1, Jordan, Ontario L0R 1S0 562-5285
OWNERSHIP:	The Braun family
LOCATION:	Regional Road 24
DESCRIPTION:	Equestrian/boarding facilities; outdoor trails; indoor riding ring; 30 horses at present. Approximately 54 acres.
STAFF:	Family members, no outside employees.
ACTIVITIES:	Riding lessons; 50-75 lessons per week. Times: Monday evenings, Tuesday-Thursday afternoons, Saturday mornings.
SPECIAL EVENTS:	Show jumping events in the summer.
HOURS/SEASONS OF OPERATION:	Year-round
PEAK USE:	Summer time
USER PROFILE:	Adults and children Approximately 7-15 students/day (50 students/week) 50-60% of users are children Approximately 100 people attend summer events
CURRENT LEVEL OF USE VS. CAPACITY	At capacity
LEVELS OF USE OVER PAST 3 YEARS:	Constant
CATCHMENT AREA:	Hamilton to St. Catharines, including Fonthill, Pelham, Fort Erie
TRANSPORTATION:	By car
ALTERNATIVES:	An area in Pelham called "Little Kentucky" which has approximately 5 riding/boarding facilities
FUTURE PLANS:	Improving cross-country course, hosting Ontario Championships
COMMENTS/CONCERNS:	• Damastra Farms grows all its own feed on the property; there is concern about possible contamination of these crops from spills, accidents. • Farm borders Twenty Mile Creek - potential for contamination also. Boarders have expressed concerns regarding additional truck traffic on Regional Road 24; they experience difficulties with present volume of traffic getting onto Regional Road 24 (Farm has driveway access to Regional Road 24). • Riding is also done on west side of Regional Road 24 (along Bethesda, golf course up to Campden); riders must therefore cross Regional Road 24 against traffic (no designated crossing).

WHAT CAN BE DONE:

- The Brauns have considered planting a border of trees along Regional Road 24. They have changed their plans to put new paddocks by the road because of potential for increased truck fumes.
- Should use the best possible technology (i.e., Plasma Arc).
- Will OWMC guarantee the purchase of property at fair market value if there is a problem with the facility?

Date: March 11, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Gryphon Aviation Inc.

CONTACT:
Mr. Glen Smith (Partner)
16 Centennial Drive
St. Catharines, Ontario L2N 6A4
562-5172

LOCATION: 39 Victoria Avenue South, Vineland

When contacted by phone on March 11, 1986 Mr. Smith revealed that Gryphon Aviation has drastically reduced its operations for economic reasons. Presently only 4 planes are being stored at the facility and there are no plans to increase operations. Mr. Smith feels that the issues associated with the OWMC proposal are too technical in nature for his comment and he must hope that OWMC knows what it is doing.

Date: March 19, 1986
Interviewed by: C. Rattle

FACILITY NAME: Indian Lake Campground

CONTACT:
Mr. Don Young, Owner
P.O. Box 197
Fonthill, Ontario L0S 1E0
892-5622 (home)

LOCATION: East side of Regional Road 24, South of Regional Road 69

OWNERSHIP: Private - Mr. & Mrs. Don Young

DESCRIPTION:
- Approximately 200 acres
- Approximately 200 campsites; showers, washrooms
- Covered pavilion
- Recreational facilities include a pool, horseshoe pits, playing field, volleyball, BMX track, pinball, 2 playgrounds (one for 11-12 year olds), canoes, amphibious vehicles
- Nature trail
- Operate a farm on part of the property

UNIQUE FEATURES: None

HOURS/SEASONS OF OPERATION:
- May to October
- Use is becoming increasingly seasonal as many of the users are retired Canadian couples who winter in Florida and return the summer

PROGRAMS/ACTIVITIES OFFERED:
- Camping, picnicking
- Family dances
- Municipal day camps
- Boy Scout events
- Square dancers (retirees)
- Girl Guides
- Small company picnics
- Family reunions
- BMX track (primarily 13-15 year old campers)

STAFF:
- 6 employees (4 full-time; 2 part-time)

USERS:
- All age groups; families comprise 50% of total users; retired couples 40%; special groups 10%
- Municipal day camps: 50-75 children for 3 weeks in the summer, ages 8-11 years
- Square dancers, 5 weekends each year; retirees from Niagara Falls - Hamilton area, also from Buffalo and Niagara Falls, New York
- Boy Scouts (e.g., for canoeing on the lake)
- French Girl Guides used campground in 1985 (approximately 500 campers)

ATTENDANCE: Average number of daily users not available

PEAK USE:
- During July; approximately 900 adults and 400 children
- Weekends, especially long weekends

MEMBERSHIP:	50-70 season pass campers annually day pass users also
CAPACITY:	50-75% total capacity during the summer
AGE GROUPS SERVED:	All age groups: children, teens, adults, retirees
CATCHMENT AREA:	St. Catharines/Niagara Falls area primarily. Some users come from Hamilton, Buffalo and Niagara Falls, New York
TRANSPORTATION:	Automobile
ALTERNATIVE FACILITIES:	Bissell's Hideaway
FUTURE PLANS:	None
PERCEIVED EFFECT OF OWMC FACILITY ON CAMPGROUND:	• Concerned about the potential risk to health and water pollution; water (lake) on the 26 acre natural site is a drawing card. If the water source were contaminated, the campground could be affected • Increased truck traffic: truck traffic on Regional Road 24 is too much; the road is presently overloaded and is not designed for additional traffic. The land was purchased with the expectation that the truck traffic would be alleviated with the Highway 406 connection between St. Catharines and Welland. Concerned about noise levels due to additional truck traffic. • Doesn't anticipate a decrease in property values but would be of concern as the campground is their pension. Negative effect on the image of the campground
WHAT CAN OWMC DO:	• Redesign Regional Road 24 or find an alternative route to the proposed site. • Provide compensation for any impacts experienced due to an accident

Date: December 10, 1986
Telephone Interview by:
Kay Dryden

FACILITY NAME:	Lincoln Lodge
CONTACT:	Marianne Snyder (full-time employee) 526-4523
LOCATION:	Rittenhouse Road, west of Regional Road 24, Vineland Mailing Address: Lincoln Lodge, Box 610, 15 Rittenhouse Vineland, Ontario L0R 2C0
OWNERSHIP:	Private - Anna Sachovitch
DESCRIPTION:	Special Care Home
NUMBER OF RESIDENTS:	31
STAFF:	• 3 full-time • 2 part-time • owner
PROGRAMS/FACILITIES:	• Bingo and other games once a week • Large backyard • Periodic dances and social events
ALTERNATIVE FACILITIES:	Patients free to locate elsewhere if permission granted.
AREA SERVICED:	All patients are from the Hamilton Psychiatric Hospital
FUTURE PLANS:	Unaware of any plans.
PERCEIVED EFFECT OF OWMC ON REGULAR OPERATION:	None

Date: March 20, 1986
Interviewed by: C. Rattle

FACILITY NAME: Mennonite Brethren Church

CONTACT:
Rev. Murray Unruh
Box 1, Regional Road 81 and Glenview Road
Vineland, Ontario L0R 2C0
562-4475

LOCATION: NW corner of Regional Road 81 and Glenview Road

OWNERSHIP: Congregation

DESCRIPTION:
- Sanctuary (seating for 500)
- Adjoining gymnasium and kitchen
- Church office
- Basement used for education

UNIQUE FEATURES: None

TOTAL NUMBER OF PARISHIONERS: 274 members

MEMBERSHIP TRENDS: Stable

SERVICES:
Church Service - 11:00 a.m., 7:00 p.m.
Sunday School - 9:45 a.m.

AVERAGE ATTENDANCE: Approximately 250 people at Sunday morning service

USE OF FACILITY:
- Evening meetings - most weeks, 7:00 or 7:30 p.m.
- Choir practice - Thursday evenings, 8:00 p.m.
- Youth gatherings - Friday evenings, 7:00 p.m.
- The church is also used for other events such as dinners and weddings several times a year
- Weekly evening attendance varies from 20-100 people, depending upon the activity

FREQUENCY OF USE:
- Daily; evening use predominates during the week
- Estimate church used 25% of the time

CATCHMENT AREA: St. Catharines, Grimsby, north to Lake Ontario and south to Spring Creek Road; 80% of members from the Vineland area

ALTERNATIVE FACILITIES:
- Mennonite Church, West on Regional Road 81
- Vineland Missionary Church (Victoria Avenue, Vineland)

TRANSPORTATION:
- 95% automobile
- 5% walking

COMMUNITY USE OF FACILITY:
- Community Boys Club - some Thursday evenings
- Other occasional or irregular uses as requested

FUTURE PLANS: No plans in the short or mid-term future

PERCEIVED EFFECT OF OWMC FACILITY ON THE CHURCH:

- Church has no particular concerns; no steps have been taken formally as a church body
- It was decided at a congregational meeting that members with concerns should attend community and OWMC meetings
- Most members with concerns live close to the access route

ISSUES AND CONCERNS:

- Church is concerned about risk to health if trucking occurs on Sunday; concern for risk to health as a member of the community
- Many people are concerned that the use of Regional Road 24 as the access route will reduce property values

WHAT CAN OWMC DO ABOUT CONCERNS:

- Improve communication with residents, respond to their questions
- Provide more information and education (e.g., likelihood of water pollution)

Date: March 19, 1986
Interviewed by: C. Rattle

FACILITY NAME:	Pelham Union Women's Institute Centre
CONTACT:	Mrs. Robert Porteous (President) 806 Maple Street Fenwick, Ontario L0R 2C0 562-5498
LOCATION:	Regional Road 24, at Regional Road 69, Pelham
OWNERSHIP:	Town of Pelham
DESCRIPTION:	Large meeting room, kitchen, washroom
UNIQUE FEATURES:	Originally a one-room schoolhouse used by three generations of families in the community
PROGRAMS/ACTIVITIES:	• Women's Institute Meetings • 4-H Club
SPECIAL EVENTS/ PROGRAMS:	Outoor functions (picnics, barbeques), teas, bazaars, bake sales, rummage sales held periodically during the year
HOURS/SEASONS OF OPERATION:	• Meet during the day and in evenings, depending on the event/ activity • Primarily evenings during spring and fall • Used less during the winter (heating is a problem), meeting once every one or two weeks • Sometimes meet during the afternoon and hold a pot luck dinner with entertainment in the evening • Special functions generally held on weekends
STAFF:	• 1 part-time employee for maintenance, during the summer
USER PROFILE:	All age groups served; children attend events such as teas, bake sales, picnics; 4-H Club members aged 12-26 years; adults and seniors
CAPACITY:	• Approximately 30 people (indoors) • Approximately 100 people for outdoor events
MEMBERSHIP TRENDS:	Membership has declined slightly to 50-60 people. Always approximately 20 people attend regular meetings.
CATCHMENT AREA:	Approximately a 5 mile radius around the facility; one member from each of Beamsville and St. Catharines. Special events draw from areas including St. Catharines and Caistor Centre.
TRANSPORTATION:	95% Automobile (older members in the area find it too far to walk)
ALTERNATIVE FACILITIES:	• Only facility of its type in the area; could meet in members' homes but group would probably cease to exist (too much work for some members to hold meetings in their homes). • Other facilities in area, such as the Rockway Hall, are too expensive for the Women's Institute to rent.

FUTURE PLANS:	None
PERCEIVED EFFECT OF OWMC PROPOSAL ON FACILITY:	• Concern regarding danger to anyone on the property if a spill occurs along the access route • Traffic on Regional Road 24 currently a concern; its difficult to turn off Regional Road 24 to the Institute Centre • There are no parking facilities for the Institute Centre and cars are parked on the east side of Regional Road 24 when there are a lot of people. Concerned about the potential for an accident.
CONCERNS EXPRESSED BY MEMBERS:	• Emissions - health implications, e.g., cancer; downwind of facilities in Germany there is a high rate of cancer (members of Women's Institute live downwind of proposed site); most people in the area use cistern water and are concerned about emissions contaminating their cistern water; effects of air emissions on crops and livestock, and effect marketability. • Traffic - currently there is one accident each week on Regional Road 24; school buses and rural mail carriers stop along the road. It would be dangerous to mix school buses and mail carriers with more trucks, increasing the chance for an accident; the hill on Vineland is treacherous during the winter and sections of the road are notorious for black ice (sections have been closed in the past because of black ice); the area is prone to heavy ground fog, particularly in the spring and fall; exhaust fumes from the trucks would be a health hazard to people and crops; concerned about spills and sensitive fruits and consequences to humans, water courses along the access route; would the fire departments be equipped to handle spills? • Concern that leachate will seep into water systems/wells
OTHER CONCERNS:	• During dry spells (e.g., at the end of July) cracks in the clay soils are huge; if any spills occurred on the site, this would be an easy route for liquid to travel through the ground. • Potential effects on the many campgrounds in the area. • Devaluation of real estate. • Population in area is increasing; Fonthill and Fenwick are growing quickly and St. Catharines development is moving towards the facility. There are a number of schools nearby.
WHAT CAN OWMC DO:	• consider plasma arc technology at proposed facility. • identify alternative routes and distribute trucks on several routes.

Date: March 13, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Rittenhouse Branch Library
CONTACT:	Ms. Elizabeth Cummings Chief Librarian: Lincoln Public Library Beamsville Branch Mountain St., Beamsville L0R 1B0 563-7014
LOCATION:	1st Avenue, Vineland Station, Municipality of Lincoln
OWNERSHIP:	Trustees of the Moses F. Rittenhouse Trust
DESCRIPTION OF FACILITIES:	Public library
UNIQUE FEATURES:	Public library and tennis club facilities combined
PROGRAMS/ ACTIVITIES:	Public library open 12 months a year
SPECIAL EVENTS/ PROGRAMS:	• Women's craft program - 2 programs - October to December and January to June; approximately 25-30 attend once a week. • Pre-school - 4 programs - summer, fall, winter, spring, approximately 15-20 children attend once a week.
HOURS/SEASONS OF OPERATIONS:	Monday 7 to 9 p.m.; Tuesday 3:30 to 5:30 p.m.; Wednesday - closed; Thursday 3:30 to 5:30 p.m.; Friday 10 a.m. to noon and 2:00 to 5:00 p.m. for pre-school program; Saturday 10 a.m. to 5 p.m.; Sunday closed. Open 12 months of the year.
STAFF/EMPLOYEES:	2 part-time employees
USERS:	• Total (membership/regular users) - as of February 1986: 1,578 • Average number/day - approximately 20 • Times of peak use - Friday and Saturday • Number of users at peak - approximately 10 • Age groups served as percentage of total: children 10%; young adults 5%; adults 35%; seniors 50%. • Special groups - none
CAPACITY OF USE:	10 to 15 at a time. Current levels of use vs capacity: varies, at capacity on Saturdays and Fridays
MEMBERSHIP TRENDS:	8% fewer books being taken out; yet, membership is up; pre-school and craft programs remain steady.
CATCHMENT AREA:	Vineland and Vineland Station
TRANSPORTATION:	Car 95%; foot 5%
ALTERNATIVE FACILITIES:	Jordan Branch Library (19th St., Jordan) Beamsville Library (10 Church St., Beamsville)
FUTURE PLANS:	An alternative site for the library has been considered but plans are long-range and indefinite.

PERCEIVED EFFECT OF OWMC FACILITY ON LIBRARY:	• None in terms of use of the facility • No users have expressed concerns
ISSUES/CONCERNS:	• Major concern is the risk of accidents and spills associated with the OWMC trucks • Associated noise, dust, and odours as well as potential air and water pollution (local health risk). • The potential negative impact on the image of the recreation facility due to being along an access route.
POSSIBLE RESPONSES BY OWMC:	They should monitor the facility closely to ensure "more than adequate" safety measures and pollution assessment from the site.
OTHER COMMENTS TO OWMC:	• Any negative future developments must be resolved quickly (there is a need for monitoring). • Create less waste.

Date: March 13, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	United Mennonite Home for the Aged
CONTACT:	Mr. Gerhard Thiessen (administrator) P.O. Box 430, Vineland, L0R 2C0 562-5543 (work)
LOCATION	2nd St., Vineland
OWNERSHIP:	7 United Mennonite Churches
DESCRIPTON OF FACILITIES:	74-bed home for the aged plus an adjoining Senior Citizen apartment complex with 49 units (Orchard View Apartments)
SERVICE AREA:	Vineland, Niagara-on-the-Lake, St. Catharines and Kitchener
STAFF/EMPLOYEES:	• Administrative Staff: 6 • Medical Staff: 1 doctor, 6 nurses (3 are part-time) and 18 health care aides (9 are part-time) • Support Staff: 6 full-time kitchen plus 4 part-time; 2 full-time laundry plus 2 part-time
CAPACITY:	• Old age home - 74 people • Orchard View apartments - 60 people Note: both are at 100% capacity and are expected to remain at that level.
ALTERNATIVE FACILITIES:	• None in Vineland • Other homes in Beamsville, Grimsby and St. Catharines
FUTURE PLANS:	None; no room for expansion
CONCERNS EXPRESSED BY STAFF AND RESIDENTS:	The staff and residents of the apartments have expressed concerns about the truck traffic and basically don't want the project to be built in West Lincoln.
PERCEIVED IMPACT ON THE HOME FROM OWMC:	• health threat from OWMC truck spills • people might not come to the Home due to fears • truck traffic will affect the quality of daily life (noise/dust) • ambulance access to hospitals will be reduced due to truck traffic on Victoria Avenue
WHAT CAN OWMC DO ABOUT CONCERNS?	• no suggestions were provided except to change the location of the site

Date: March 11, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Victoria Experimental Farm
CONTACT:	Mr. W.A. Straver, Executive Officer Horticultural Research Institute of Ontario Vineland Station, Ontario L0R 2E0 562-4141
LOCATION:	Vineland Station, along both sides of the QEW. Access on Victoria Avenue
OWNERSHIP:	Province of Ontario
GENERAL DESCRIPTION:	The farm is a 230 acre horticultural research station developing both indoor and outdoor crops.
UNIQUE FEATURES:	None
PROGRAMS/ ACTIVITIES OFFERED:	While tours for the general public are discouraged, currently 50-60 per year are provided to certain groups (e.g., school groups, senior citizen groups, horticultural colleges). The farm is used extensively in the spring, summer and fall as a setting for photographing wedding parties, especially on weekends.
SPECIAL EVENTS:	The last Sunday of May or the first Sunday of June there is an annual open house which attracts over 2,000 people.
HOURS/SEASONS OF OPERATION:	Year-round
AVERAGE NUMBER OF EMPLOYEES:	60-70 research employees; additional 30-40 summer employees
PEAK USE:	The research station operates year-round but as a recreation facility; the peak season would be the summer, especially weekends.
USER PROFILE:	The number of people taking tours is not known, but Mr. Strover estimated it to be approximately 1,000-1,500 (mostly between and September). Since the farm is open to the public and there is no official gate for counting, the number of non-tour users is unknown and Mr. Strover could not provide an estimate.
CAPACITY OF USE:	Not available.
CURRENT LEVELS OF USE VS CAPACITY:	There is some additional recreational capacity but the farm is reluctant to have it utilized.
LEVELS OF USE DURING PAST 3 YEARS:	Stable
CATCHMENT AREA:	Tourists range from regional to international.

TRANSPORTATION:	Car or bus
ALTERNATIVE FACILITIES:	As a recreation facility: Prudhomme Landing
FUTURE PLANS:	Possibility of a slight expansion but basically a status quo situation.
IMPACT ON REGULAR USE:	None anticipated
CONCERNS:	Major concern is the threat of truck accidents near the farm resulting in spills causing air and water contamination.
WHAT CAN OWMC DO?	Ensure traffic safety.

Date: March 14, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Victoria Tennis Club
CONTACTS:	Ms. E. Gray (President) 15 Towering Heights Blvd., Apt. 1103 St. Catharines L2J 3G7 227-3751, ext. 243 Mr. Robert Martin (Trustee) Martin Road Vineland
LOCATION:	First Avenue, Louth, Vineland Station (part of Lot 23 in the broken front concession in the Township of Louth)
OWNERSHIP:	Trustees of the Moses F. Rittenhouse Trust
SITE SIZE:	Irregularly shaped; 2.39 acres, 465.75 feet at widest point; 379.1 feet at deepest point; 128.51 feet of road frontage.
GENERAL DESCRIPTION:	Parking area, library, common room, 2 changerooms/washrooms 4 tennis courts, grassy area.
UNIQUE FEATURES:	None
PROGRAMS/ ACTIVITIES:	Matches, tournaments, junior instruction, league play (from Hamilton, Niagara Districts); host tournaments from various locales - not just club members.
SPECIAL EVENTS/ PROGRAMS:	None
HOURS/SEASONS OF OPERATION:	6:00 a.m. - 10:30 p.m.; April to October
STAFF/EMPLOYEES:	No full-time; 1 part-time general maintenance person.
USERS:	• Membership approximately 200; about 50 regular users; average of 25 users/day. • Ages: 6-18 - 42% of total users; 18-65 - 65% of total users; over 65 - 4% of total users. • club members, high school students, elite junior players in Southwestern Ontario • Prime times: Tuesday 9:00 a.m. - 11:00 a.m.; Wednesday and Friday 7:00 p.m. - 9:00 p.m.; Saturday and Sunday 1:00 p.m. - 4:00 p.m. (25-30 at peak). • Peak use: 7:00 p.m. - 9:00 p.m. Wednesday and Friday: June/July/August

CAPACITY OF USE:	Operating at 50% capacity based on the ratio of 100 members per court. Could handle 400 members.
MEMBERSHIP TRENDS:	Level of use during the past 3 years has been stable.
CATCHMENT AREA:	60% from Vineland, Beamsville; 40% from St. Catharines
TRANSPORTATION:	99% by automobile; 1% on foot.
ALTERNATIVES AVAILABLE:	In St. Catharines and Hamilton; no full-time facilities in Grimsby.
FUTURE PLANS:	Nothing significant proposed.
PERCEIVED EFFECT OF OWMC FACILITY ON CLUB:	No impact on membership or usage is anticipated.
ISSUES/CONCERNS:	• Concerned about potential accidents and noise from truck traffic; however, do not see any real effects if trucks will be operating only during working hours since peak use at the Club is during the evenings and weekends. • Would like to see better information on the nature of the waste and the risk to human health. • Would like to have a representative from OWMC attend one of their Board meetings.

Date: March 20, 1986
Interviewed by: C. Rattle

FACILITY NAME:	Vineland Co-op Nursery
CONTACT:	Mrs. Mary Hodgson, President First Avenue Vineland Station L0R 2C0 562-4464
LOCATION:	24 Rittenhouse Road, Vineland (in Vineland Women's Institute Hall)
OWNERSHIP:	Co-operative
DESCRIPTION:	• Nursery school operates out of the basement of the Vineland Women's Institute Hall • Playground
UNIQUE FEATURES:	None
ENROLMENT:	16 children; 2 1/2-5 years of age
CAPACITY:	18 children
TRENDS:	Has been stable but declined in the past year
ALTERNATIVE DAYCARE CENTRES:	Beamsville Co-op Nursery School
STAFF:	• 1 full-time teacher • 2 mothers each day
DAYS/HOURS OF OPERATION:	• Monday-Friday: 9:00 a.m. to 11:20 a.m. • September 15 to June 15
CATCHMENT AREA:	Vineland, Vineland Station, Jordan
TRANSPORTATION:	Automobile
FUTURE PLANS:	Afternoon class unlikely in the near future due to decline in enrolment; possibly after the next 5 years
PERCEIVED EFFECT ON NURSERY SCHOOL:	• Concern over potential accidents/spills affecting children • No concern regarding increased traffic as none of the children walk to the school
CONCERNS EXPRESSED BY PARENTS:	Some are very concerned about the proposed access road, especially those who live on Regional Road 24

ISSUES AND CONCERNS:

Mrs. Hodgson noted a number of general concerns regarding the proposed facility:

- Main concern is safety/truck accidents
- The access road is inappropriate and inadequate:
    - the road may not be constructed to withstand heavy trucks
    - there are no shoulders
    - the road can't handle much more traffic; there are currently many close calls and its only a matter of time before a fatality
    - residents are concerned about the traffic now and feel that any more would affect their standard of living
    - enough toxic substances are currently carried on the highways
    - Regional Road 24 is a bus route for children
    - residents back out onto the road from driveways and park on the road - concern for conflict with additional trucks and the safety hazard they pose
    - truck drivers don't slow down through the village
- Highway 406 was to be a solution to the current traffic problem but truck drivers do not like the 406 and continue to use Regional Road 24
- Not opposed to the facility or the site; the facility is needed

WHAT CAN OWMC DO:

- Find a better route to transport waste to the site or contruct a by-pass, in order to minimize the risk of injury to people (e.g., construct a by-pass one concession west)
- Other alternatives would be to upgrade Regional Road 24 or build truck transit ways along the highways (e.g., Highway 20)

Date: March 26, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Vineland Mennonite Church

CONTACT:
Rev. Harold Nigh
Box 502, Vineland, L0R 2C0
834-4051 (home)
562-5944 (church)

LOCATION: Corner of Rittenhouse and #81 (north side)

OWNERSHIP: Congregation

GENERAL DESCRIPTION: Sanctuary, office, library, large meeting room, kitchen, nursery

UNIQUE FEATURES: The first Mennonite Church in Canada

TOTAL NUMBER OF PARISHIONERS: Approximately 70 (some are not active); stable membership

SERVICES: Sunday workshop: 11:00 a.m.; Sunday School: 10:00 a.m.; Summer hours: 1 service at 10:00 a.m. (no Sunday School)

AVERAGE ATTENDANCE: 40-45

CHURCH USE OF FACILITIES:
- WMSC (Women's group, quilting, etc.) Monday - approx. 15
- Prayer meeting/Bible Study - Wednesday - approx. 15-20
- Family social events - irregular

CATCHMENT AREA: Vineland and Jordan (a few from St. Catharines)

USE: Regular use predominates

PEAK TIMES: Sunday

ALTERNATIVE FACILITIES: Other Mennonite Churches in the area. Some members might join other churches such as the United.

CAPACITY: Sanctuary - 200; Meeting room - 100

CURRENT LEVEL OF USE VS CAPACITY: 40%

COMMUNITY USE OF CHURCH FACILITIES:
- Voting station
- Local Mennonite Ministry meets there every other month
- Annual daffodil teas (Cancer Society)
- Teachers' association meets once a year

NOTE: There is no renting of the hall for receptions.

PROMINENT CHURCH MEMBERS: Ralph and Eileen Snyder - Hwy. 24, Vineland Station
Dean High - 1st Road, Vineland Station

TRANSPORTATION: Car

FUTURE PLANS: The church is planning to integrate with the United Mennonite Church. There are plans for a weekly nursery school combined with a Bible Study for the mothers. Construction of a bi-centennial monument in front of the church (15-20 feet).

PERCEIVED IMPACT ON THE CHURCH:

- generally a negative impact
- don't expect to lose any members
- traffic problems associated with heavy truck traffic at the intersection of Hwy. 81 and Regional Road 24

ISSUES AND CONCERNS:

- the church opposes importing waste of others
- potential truck accidents and spills
- many members of the congregation are farmers and those on the access route would be hard pressed to move if they wanted. It is difficult to move farm locations.

WHAT CAN OWMC DO ABOUT CONCERNS? Explore newer, at-source technologies; select a different route.

FACILITY NAME: Vineland Mennonite Cemetery

OWNERSHP: The municipality

LOCATION: Adjacent to the church

SIZE: 3-4 acres

DATE ESTABLISHED: Approximately 1815

ALTERNATIVES: This is the only cemetery in the Vineland area. The next closest would be in Beamsville.

FUTURE PLANS: The cemetery is presently expanding.

Date: March 20, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Vineland Missionary Church (an independent Mennonite Church)

CONTACT:
Pastor Dennis Anderson
P.O. Box 47, Vineland, Ontario L0R 2C0
562-7141 (church)

LOCATION:
13 Victoria Avenue South
Vineland, Ontario L0R 2C0
Town of Lincoln, Regional Municipality of Niagara

OWNERSHIP: The Missionary Church of Canada, Inc.

DESCRIPTION:

- Sanctuary and balcony: will seat 250+
- Four Church offices
- 2 major halls - used for meetings/banquets kitchen, library
- 12+ Sunday School rooms (some can be divided in to smaller rooms or opened to enlarge into 2 or 3 more meeting halls)
- 2 restrooms on main floor
- small kitchen possibility in large upper floor room for lunches (sink, fridge, plug-in for kettles, hotplates)
- Janitor's room
- Furnace room
- Four additional storage rooms

UNIQUE FEATURES:

- Ballfield
- Also used for drive-in movies and drive-in evening services in the summer.

TOTAL NUMBER OF PARISHIONERS: 250 to 300 attendants

MEMBERSHIP TREND: Increasing

SERVICES:

Sundays:

- 8:30 a.m. to 9:30 a.m. - 40 to 80 attendants
- 9:45 a.m. to 10:45 - 130 attendants
- 11:00 a.m. to 12:00 noon - 140 to 180 attendants
- 6:30 p.m. to 8:45 p.m. - 100 attendants
- In summer at dusk to midnight - 270 to 300 attendants or more

CHURCH USE OF FACILITIES:

- Monday: Gideons - 1st of each month - 7:30 p.m. - 14
- Tuesday: During winter months, every Tuesday - all day - ladies' quilting 8 to 12; choir - 31; 7:30 p.m. to 8:45 p.m. - children's meetings
- Wednesday: regularly all year 7:30 p.m. to 9:00 p.m. - 30
- Thursday: 1st of each month - ladies' meeting - 40 to 50
- Friday: Regularly through winter - youth 15 to 20+
- Saturday: Regularly through summer - drive-in movies - 200 to 300+
- Additional uses: weddings, funerals, banquets, and for various requests which come in from time to time.

CATCHMENT AREA: Parishioners come from Vineland, Vineland Station, Jordan, Jordan Station, Fenwick, Fonthill, St. Catharines, Beamsville, Grimsby and beyond.

PEAK TIMES: Friday, Saturday, Sunday

CAPACITY: Not provided.

CURRENT LEVEL OF USE VS. CAPACITY: Friday, Saturday, Sunday - 80%; other weekdays - 50%

PROMINENT CHURCH MEMBERS: Mr. Norman Percy, Vineland. He is very active in the citizen groups.

TRANSPORTATION: Mostly by car with some on foot.

ALTERNATIVE FACILITIES: Not known.

FUTURE PLANS: The church has long-range plans to construct a senior citizens' apartment complex on the south side of their property. There is also the possibility the church may sell its property and facilities to a funeral home company and move to another location in Vineland. The offer made by the funeral home was unofficial.

PERCEIVED IMPACT OF OWMC FACILITY ON CHURCH:

- The OWMC facility proposal has put the church's future plans in doubt.
- The offer to buy the church was with the condition that the OWMC facility not be built.
- Two church families have stated that they are going to move. The family names are Nichols and Yseldycks.
- The church is located on the Victoria Street hill in Vineland and this represents the worst possible site for truck accidents and spills. Already, many trucks break down on the hill and have to be blocked and repaired on-site. If this occurs on a weekend the trucks, with their cargos, sit on the hill for a couple of days. If an OWMC waste truck were to break down on the hill it might be left over the weekend and this would interfere with the drive-ins and Sunday services.

OTHER ISSUES AND CONCERNS:

- The OWMC reports do not tell the whole story. The minister pointed to a number of omissions in documents.
- There is little information on emergency response. The local volunteer firemen are not trained or equipped to handle toxic spills. Who would respond and how long would it take?
- Often large trucks are illegally parked on Victoria Ave. along the Avondale Restaurant and this poses a safety hazard. Is OWMC willing to buy out the Avondale?
- Land values along the access route and near the preferred site have diminished.
- Why is the preferred site so close to the U.S. border? Will waste be coming in from the U.S., and if so, why hasn't this been included in OWMC's calculations?

- In OWMC's accident calculations there is no consideration of truck breakdowns or other accidents such as truck cabin fires.
- This project will affect the agricultural community and this will have repercussions for all of Ontario.
- Since there were a number of sites with suitable clay quality and the next most important selection factor, transportation, was only rated number 5, how did 9C become the preferred site? The church feels that an inappropriate amount of emphasis was placed on site qualities.
- The West Lincoln site as chosen not because of its small community size but because the Mennonite community was viewed as passive and unwilling to put up a fight. Paster Anderson stated that, contrary to this perception, his church members would be prepared "to lay on the road if need be".
- The church is downwind of the facility and will receive emissions which may pose a health threat to people, animals and crops.

NOTE: Since the announcement of the OWMC proposal, Pastor Anderson has taken his children out of the Vineland Public School and sent them to St. Catharines for safety reasons. He stated that four other church families are considering following suit.

Date: March 19, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Vineland Pentecostal Church

CONTACT: Pastor Ron Rantamaki
Box 55
Vineland, Ontario L0R 2C0
562-4693 (church)
562-5693 (church)

LOCATION: 65 Victoria Ave., Vineland

OWNERSHIP: Church owned

GENERAL DESCRIPTION: Sanctuary, auditorium, kitchen, several classrooms

UNIQUE FEATURES: None.

TOTAL NUMBER OF PARISHIONERS: 130 (62 actual members).

MEMBERSHIP TREND: Increasing

SERVICES:

- Sundays 9:30 a.m. - 1:00 p.m.; Tuesday 6:30 p.m. - 9:00 p.m.;
- Wednesday 6:30 p.m. - 9:30 p.m.; Thursday 3:30 p.m. - 5:30 p.m.;
- Friday 6:30 p.m. - 9:30 p.m.; Sunday School - 9:55 a.m.

AVERAGE NUMBER IN ATTENDANCE: Sunday - 95; Wednesday - 55; Friday - 15; Tuesday - 18; Thursday - 30; Sunday School - 85

CHURCH USE OF FACILITIES:

- Praise Service - 7:00 p.m. Sunday - 75 people
- Women's Ministries - 7:00 p.m. - 9:00 p.m. the first Tuesday of each month - 35 people
- Family Night - Wednesday 7:00 p.m. - 8:15 p.m. - 60 people
- "Kid's Klub" - Thursday 3:45 p.m. - 5:00 p.m. - 30 children
- Youth Ministries - Friday 7:00 p.m. - 15 teenagers
- Also a Niagara Section Youth Rally every 4th Saturday of the month 200 teenagers
- Men's Fellowship - the 1st Saturday of September, November, January, March and May at 8:30 a.m. - 20 men
- Adult Fellowship - bi-monthly meeting - 60 people
- Note: The church sponsors a gym night at Vineland Public School, Thursday 7-9 p.m. and involves approximately 40 children.

CURRENT LEVEL OF USE VS. CAPACITY: Difficult to say. Facility is used at 75% capacity in the mornings. The church is used on a regular basis.

ALTERNATIVE FACILITIES: St. Catharines, Grimsby

CATCHMENT AREA: 10 mile radius

COMMUNITY USE OF FACILITIES: No outside groups without church affiliation.

TRANSPORTATION: Car and walking. The church also has 2 vans to transport members to the church.

FUTURE PLANS: The church is hoping to have a church, senior citizens complex and daycare built in the proposed Heritage Village development on Victoria Avenue. The senior citizens complex would accommodate 1500 residents.

PROMINENT CHURCH MEMBERS:

Cephas Steinmann - 562-5164
Harry Pelissero - 386-6818; with Farm Board
Lawrence Moyer - 562-5478

PERCEIVED IMPACT OF OWMC FACILITY:

- Has thrown doubt over the Heritage Village plans. Development may not happen.
- Church members may move out of the area - one family, whose child took part in the church, has already moved to Georgian Bay due to the proposal.
- Trucks may run into the building which is only about 2 feet from the street.
- Heavy truck traffic may result in structural damage to the church.
- The church may have trouble selling the building if they want to move. Insurance/liability problem.
- OWMC trucks will present a hazard to those crossing the street to the church.
- The church already suffers from truck noise and this would be increased.

OTHER CONCERNS:

- This area already has a high cancer rate and this would only increase the risk.
- People are worried about their property values and are considering selling.
- Don't feel the road physically can carry so much traffic.

WHAT OWMC CAN DO ABOUT CONCERNS?

- Guarantee a controlled amount of truck traffic.
- Select an alternate truck route.
- Guarantee the trucks will not damage or affect the church or its members.
- Guarantee that the chemicals will not affect water, air or land quality.

COMMENTS:

- The Minister feels that the passive nature of the Mennonite people was a decision-making factor in the selection process.
- Some members want the church to take aggressive steps against the OWMC proposal but the Minister does not support this idea.
- The Minister can't understand how the 9C site which received a low rating initially ended up the preferred site.

Date: March 6, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Vineland Public School
CONTACT:	Mr. William Neal (Principal) 100 Victoria Avenue, Vineland L0R 2C0 562-5211 (school)
LOCATION:	100 Victoria Avenue, Vineland
GENERAL DESCRIPTION:	15 classrooms plus a gym
GRADES:	Jr. Kindergarten to Grade 8
ENROLMENT:	Capacity: 387; Present: 357; Projected: no increase; Trends: stable
ALTERNATIVE FACILITIES:	Campden, Jordan, Maple Grove, Beamsville
STAFF:	Administrative: principal, vice-principal, secretary Teaching: full time - 13; part-time - 4 Other: 1 special education counsellor (1/week); 1 primary consultant (1/week)
SPECIAL EDUCATION:	- 2 primary special education classes - integrated part-time - alternative: Grimsby Central
COMMUNITY USES OF SCHOOL:	- Pentecostal Church - youth recreation; Thursday nights;20 - Bethesda home for retarded adults - reading classes; Thursday nights; 20 - Home and School group - babysitting course; 50 - Niagara Centre for Youth Care (NCYC) - recreation; Tuesday nights; 10.
TOTAL NUMBER OF COMMUNITY USERS:	approximately 100
CAPACITY:	not available
CURRENT LEVEL OF USE VS CAPACITY:	50%
CATCHMENT AREA:	Vineland Campden
ALTERNATIVE FACILITIES FOR COMMUITY USERS:	Jordan Elementary School
FUTURE PLANS:	No change, although the Campden School may close in a number of years from now (unofficial).

PERCEIVED EFFECTS ON REGULAR OPERATIONS: Fear, uneasiness on the part of mothers and staff.

WHAT CAN BE DONE ABOUT THIS: Need for a stoplight near the school.

CONCERNS EXPRESSED BY STAFF/PARENTS/ STUDENTS:

- Parents and staff are concerned about traffic levels. The sidewalk is very close to the road, not enough buffer between the road and the sidewalk especially in the winter when the sidewalk is covered.
- Conflict between buses and trucks. All the buses must run along the access route for some distance. Potential conflict between buses and trucks on the steep hill at Victoria Avenue. Difficult for trucks to stop on the way up the hill for buses picking up children on the hill.
- staff is concerned about the lack of emergency plans in case of an accident in terms of selecting alternate bus routes.
- concerns over the quality of air in case of a spill and the risk to health
- classrooms facing Victoria Avenue would be affected by noise from truck traffic during the spring and fall.
- the children have not expressed any concerns

POSSIBLE RESPONSES BY OWMC TO CONCERNS: OWMC should find a different access route - one with fewer residents.

Date: March 19, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Vineland United Church

CONTACT: Rev. Meg Grieve
Box 1, Vineland Station L0R 2E0
562-4515

LOCATION: NW corner of John Street and Victoria Avenue, Vineland Station

OWNERSHIP: United Church of Canada

GNERAL DESCRIPTION: Sanctuary, 2 halls, six rooms, kitchen. There is a church-owned manse next door to the church on John Street.

UNIQUE FEATURES: None

TOTAL NUMBER OF PARISHIONERS: 164 families; stable membership

SERVICES: Sunday - 11:00 a.m. There are additional special services during the year marking church year celebrations.

AVERAGE ATTENDANCE: Sunday - 75

CHURCH USE OF FACILITIES:

- United Church Women meet once a month in the evening or afternoon. Approximately 20 women.
- Church choir practice each Thursday; 15 people
- Training programs for groups such as the Brownies and Bible Society are held once a month
- Church board and other committee meetings - irregular and infrequent

COMMUNITY USERS OF THE CHURCH FACILITIES:

- Liberal Association meets 6 times a year
- Community Care - an organization to help the needy, regularly meet at the church, have their Christmas store and donation depot (e.g., clothing) at the church. Contact person: Doreen Hutchinson.
- the hall is rented on a non-profit basis for weddings, showers, community organizations (difficult to provide numbers)

CAPACITY: 200 (fire regulation)

CURRENT LEVEL OF USE VS CAPACITY: 35 or 40%; the hall is presently being used every weekend for events.

CATCHMENT AREA: North to Lake Ontario, south to Campden, west to Beamsville and east to Jordan Station.

ALTERNATIVE FACILITIES: Not known

TRANSPORTATION: Automobile

FUTURE PLANS: The church is presently developing a strategy to increase community involvement and rise of the facility.

PROMINENT CHURCH MEMBERS:

- Mr. George Huffman; Vineland; Chairman Board of Stewards
- Mr. Charlie Brandt; Vineland Station; Congregational Committee
- Ms. Mary Campbell; Vineland; Church Secretary

PERCEIVED EFFECT OF OWMC FACILITY ON THE CHURCH: The minister anticipates no change in attendance as a result of the OWMC proposal. However, the church is very concerned about the increased truck traffic along Victoria Avenue. The church has already experienced some foundation damage due to the traffic vibrations. In addition, water mains, located under the widened road, have ruptured in the past due to the traffic and may well do so again in the future. The risk of increased incidents of traffic accidents and spills associated with the OWMC trucks is a serious concern as it poses a threat to both human health and the environment.

OTHER ISSUES AND CONCERNS:

- Many members of the congregation are engaged in fruit growing and are thus susceptible to toxins. The Church views the selection of prime agricultural land for a waste site as unacceptable.
- Concern has been expressed about water contamination due to leaching at the OWMC site.
- newer technologies should be explored such as the plasma arc which would take care of wastes on-site
- if the fruit belt is damaged due to the OWMC proposal, fruit prices would rise and local unskilled workers (fruit pickers) would be unemployed
- the congregation realizes there will be some new jobs associated with OWMC but view this as an unsatisfactory trade-off against risk to human and environmental health
- there will be a loss of community image and morale.

WHAT CAN OWMC DO ABOUT THESE CONCERNS? Explore newer at-source technologies, especially the plasma arc.

NOTE: Many church members attended a meeting with the plasma arc people sponsored by a local citizens group. Before this meeting the general feeling was one of despair but the meeting appears to have provided a new hope and the impetus to continue fighting OWMC. OWMC is viewed as very arrogant.

Date: March 19, 1986
Interviewed by: J. Beckwith

FACILITY NAME:	Vineland United Mennonite Church
CONTACT:	Rev. Peter Retzlaff Box 305 Vineland, Ontario L0R 2C0 562-7526 (home) 562-4422 (church)
OTHER PROMINENT CHURCH MEMBERS:	Jake Fransen (former Minister), 957-3045 Rudi Thressin (Congregational Chairman), 562-4324 Nick Hamm (Church Council Member), 562-7443
LOCATION:	2nd Street and Church Street, Vineland
OWNERSHIP:	Congregation
GENERAL DESCRIPTION:	Sanctuary, hall, kitchen, classrooms
UNIQUE FEATURES:	None
TOTAL NUMBER OF PARISHIONERS:	Approximately 570; membership 421 + 150 children; stable
SERVICES:	• Sunday 9:30 a.m. - 12:00 p.m.; 7:00 p.m. - 9:00 p.m.; average number in attendance 350 • Sunday School - 9:45 a.m. - 10:45 a.m., approximately 200.
CHURCH USE OF FACILITIES:	(involves some non-church members) • Adult study group and youth group; Wednesday and Friday nights, approximately 20 • Boys Club, Wednesday, approximately 20 • Ladies Groups, every 3rd Tuesday, approximately 120-140 • Used other evenings and Saturdays for activities such as weddings and funeral gatherings
CAPACITY:	Sanctuary - seating for 450; hall - 250 at tables
LEVEL OF USE VS. CAPACITY OF THE HALL:	Weekends - 70%; weekdays - 25% Note: There are few nights without something being used and there is heavy use on weekends.
ALTERNATIVE FACILITIES:	Sanctuary: Mennonite Brethren, Missionary Church Hall: Mennonite Brethren Church
CATCHMENT AREA:	Radius of 15 miles. A few from St. Catharines and Grimsby
TRANSPORTATION:	90% by car; 10% by foot.

FUTURE PLANS:	There are some tentative plans to extend the lobby and build a U-drive to unload senior citizens. The church would like more community use of the facility.
PERCEIVED IMPACT ON THE CHURCH:	No significant impacts on number of users but the Church is very concerned about the safety of seniors and children having to cross Victoria Avenue with increased truck traffic.
OTHER ISSUES AND CONCERNS:	Mr. Nick Hamm (Church Council Member) in a letter (Nov. 15, 1984) listed a number of additional concerns associated with the OWMC proposal. These concerns are of a community nature rather than being specific to the church itself. • Risk of spills along the access route - risk to health • Stack emissions causing air pollution which would hurt fruit production. • Fear that OWMC is following the same pattern as what occurred in the Niagara River area of New York. • Prime agricultural land is not suitable for waste disposal • The waste facility would represent a time bomb.
WHAT CAN OWMC DO?	• Ensure that pedestrian crossing opportunities on Victoria Avenue are safe and adequate for children and seniors. • Safe speed limits for trucks travelling through populated areas.

Date: March 13, 1986
Interviewed by: J. Beckwith

FACILITY NAME: Vineland Women's Institute Hall

CONTACT:
Mrs. Mary Murray (President)
13th St., Jordan Station
L0R 1S0
562-4989 (Home)

LOCATION:
24 Rittenhouse Road, Vineland, Ontario
Lot 1, Concession 5
L0R 2C0
562-5074

OWNERSHIP: Vineland Women's Institute

GENERAL DESCRIPTION: Hall, washrooms, kitchen, storeroom (dishes)

UNIQUE FEATURES: Originally an early Mennonite Church moved to the site.

PROGRAMS/ ACTIVITIES: Day Nursery School/ 1/2 day/ 9:00 - 11:30 a.m., Monday to Friday Same season as public schools. There are 25 - 30 children plus teachers and helpers. Children are aged 3-5 years.

SPECIAL EVENTS PROGRAMS:

- Institute meetings 2nd Tuesday of every month, 7:30 p.m.
- Ontario Ministry of Agriculture had a microwave course in the fall.
- Ontario Ministry of Agriculture can use the hall any time free of charge. Usually 2-6 times per year for forums (e.g., quilting), other short courses. They must have 12-15 people to have a course.

HOURS/SEASONS: Year-round.

STAFF AND EMPLOYEES: I caretaker comes approximately once a week; rest are volunteers.

USERS: 42 members

CAPACITY: Uncertain, depends upon the use, but they can serve a maximum of 150 people.

MEMBERSHIP TRENDS: The number of people using the facility has been relatively stable.

OTHER USERS:	• The hall is rented out for private functions such as weddings, showers, parties. • They come from all over including Toronto, St. Catharines, Niagara Falls. • Weekends (especially Sunday afternoons) and evenings are most popular times for non-member users. • Difficult to provide numbers but the hall has a maximum serving capacity of 150.
CATCHMENT AREA FOR MEMBERS:	Campden, Jordan (1), Vineland, St. Catharines (a few)
CATCHMENT ARE FOR THE NURSERY SCHOOL:	Vineland and Vineland Station.
TRANSPORTATION:	Automobile
ALTERNATIVE FACILITIES:	• Institute members' homes • Nursery School: Vineland and Vineland Station. • Renters for receptions, etc.: none in Vineland except for the Vineland United Church.
FUTURE PLANS:	None given.
PERCEIVED EFFECT OF OWMC FACILITY ON INSTITUTE:	• If there is a spill then the Hall would be used as an emergency shelter and this would mean that regular users would have to go elsewhere (e.g., meet in their own homes). • If there is no accident, then regular operations would not be affected.
USERS' CONCERNS:	Women members have many concerns about OWMC, although they are not really directed to the use of the Women's Institute but are more general in nature, mostly questioning the selection of the preferred site and the preferred technology. Mrs. Murray provided the responses of a number of the Institute members. 58 members have written about their concerns (as individuals) to their MP and Mayor.
WHAT CAN OWMC DO?	• Let the younger generation use 20th century technology. • Provide assurance that there will be no spills or leaks. • Provide assurance the farmland and environment will not be harmed.
OTHER COMMENTS/ CONCERNS FOR OWMC TO CONSIDER:	• Remove Dr. Chant and hire younger people. • Of the list of potential impacts presented, all were rated as a 1 or 2 (very great concern). • Prime fruit growing land is not suitable for a waste disposal site. • Fear of water contamination of wells. • Traffic problems from truck traffic. • Truck fumes. • Too many children along Victoria St. for heavy truck traffic. • Doesn't matter what residents say regarding decision-making. • Loss of wildlife.

APPENDIX C

SITE VISITS: EXISTING HAZARDOUS WASTE MANAGEMENT FACILITIES

APPENDIX C

SITE VISITS: EXISTING HAZARDOUS WASTE MANAGEMENT FACILITIES

To assist in the social impact assessment, information was gathered on experiences at existing hazardous waste management facilities (HWMF). Background data were documented on a number of existing facilities; four of these HWMF were visited. This Appendix provides a list of the community contacts interviewed during the site visits and a summary table of the data obtained on these HWMF. An additional list is provided of other existing facilities. This appendix is divided into three sections:

- Community Contacts
- Site Visits: Characteristics and Impacts of Existing Hazardous Waste Management Facilities
- Other Existing Hazardous Waste Management Facilities for which Background Data was Gathered

COMMUNITY CONTACTS

FACILITY	CONTACT
• Rollins Environmental Services Inc. (Deer Park, Texas)	• Ms. Georgia Haskall, RN. Citizen Representative
	• Mr. Jeff Paterson, Reporter Pasadena Citizen
	• Mr. Floyd Socia, City Manager Deer Park, Texas
	• Mr. Edward Watson Democratic Representative
	• Ms. Jenny Yang, Engineer Texas Air Control Board Enforcement Office
• Rollins Environmental Service Inc. (Baton Rouge, Louisiana)	• Mrs. Annie Beaudry, Director Alsen Community Action Service Centre
	• Mr. Bryant Conway, Attorney
	• Mr. Mike Dunn, Reporter Baton Rouge Morning Advocate
	• Mr. and Mrs. Edward Ewell Citizen Representative
	• Mr. Peter Heine, Mayor Town of Baker, Louisiana (5 to 6 miles from facility)
	• Mr. Kip Holden, Councillor East Baton Rouge Parish Council
	• Mrs. Mary McCastle Citizen Representative
• Stablex Waste Disposal Facility (Blainville, Quebec)	• Mr. Jean Bertrand, Editor La Voix Des Mille-Isles
	• Mr. Onil Charron, Councillor Blainville, Quebec

- Mr. Claude Fournier
  Quebec Ministry of the Environment
  - responsible for monitoring facility
- Mr. Daniel Green, Executive Director
  La Societe vers Pollution
- Mr. Nghiep Le Hong
  Quebec Ministry of The Environment
  - involved during the siting process and start-up of facility
- Ms. Chantel Leonard
  Real Estate Salesperson
  Les Entrepreneurs Associes

- Tricil Corporation
  (Sarnia, Ontario)
  - Mr. Bill Hollo
    Director of Planning
    Lambton County
  - Lambton Anti-Pollution Committee
    - Wayne Manley
    - Sherry Morrison
    - Jack Snell
    - Gord White
    - Jerry and Joan Zahevka
  - Mrs. Jean Marsh, Councillor
    Moore Township
  - Mr. Bob Redhead,
    Community Relations Officer
    Tricil Corporation
  - Mr. Rod Whitman, Clerk
    Moore Township and
    Chairman, Chemical Valley
    Emergency Response Coordinating Committee

SITE VISITS: CHARACTERISTICS AND IMPACTS OF EXISTING HAZARDOUS WASTE MANAGEMENT FACILITIES

	TRICIL (Sarnia, Ontario)	ROLLINS (Baton Rouge, Louisiana)
DESCRIPTION OF FACILITIES	- covers 300 acres - incinerator with 225 ft. stack (opened 1983) - spray dryer, filtering equipment - landfill (on-site) - opened in the 1960s - plant visible from 3 miles away - stack visible more than 3 miles away	- incinerator, neutralization, precipitation, oil separation, biological treatment processes - landfill (on-site), deep well injection (off-site) - no handling of PCBs allowed
CHARACTER OF AREA	- consists of farm and rural residential development; strip development along major roads (Route 4 running from Petrolia to Sarnia) - Brigden is nearest town	- Alsen is a black community with approximately 400 households - consists of some old ramshackle tenant-farmer housing and some newer working-class brick housing in a subdivision - Baker, Louisiana, 5 to 6 miles from Rollins - population of 15,000 - other chemical plants in area (i.e. Allied Chemicals) - nuclear plant 17 miles northwest of Baker
NEAREST RESIDENTIAL AREA	- adjacent	- 3/10 of a mile from operating incinerator and 700 feet from boundary of Rollins facility
NEARBY COMMUNITY AND RECREATION FACILITIES		- community centre located 1/3 mile from Rollins property boundary and 1/2 mile from incinerator - church directly across road from Rollins
IMPACTS EXPERIENCED	- odour (fogging) associated with plume under certain weather conditions - surface water leachate and run-off; contaminated Polysar pipeline area - noises from blower fans, speakers at plant and beepers on trucks heard up to 1.5 km away - odour from landfill - affects use and enjoyment of property, i.e. BBQs	- numerous odour problems causing nausea and respiratory problems in Alsen (i.e. Feb. 6th, 1986) - discharges with no warnings - much less moss on trees than before - gardens have been abandoned and vegetation burnt when incinerator does not work properly (only workable in protected areas)

	TRICIL (Sarnia, Ontario) cont'd	ROLLINS (Baton Rouge, Louisiana) cont'd
	- more waste holding and treatment facilities being developed by large industry in area - carbon black emission from incinerator - dust problem from fly ash dust from stockpiles being used in mixing for solidification process - lighting affects whole area because there is a glow during evening and night. Represents a big change in area since it is no longer dark as one would expect in a rural area - 3-4 problems in past 18 months. Recently, surface water overflow discharged off-site onto neighbouring properties	- trees have died (flowers as well) - dust particles in air from landfarming (have decreased since landfarming stopped) - leachate problems - chemical emitted (tylene) which produces a gas and affects respiratory system, heart lining and central nervous system - unconfirmed claims of cattle being killed by a strangling odour in March 1980 - since 1980, there have been more than 30 charges by state against Rollins - 1983 - strong odour in area due to a tank bursting - in 1980, residents launched a class action suit covering 820 people who have been affected by the facility - Allied Chemical and GGWA Chemical have suits against Rollins for compensation of their employees for respiratory ailments, rashes, etc. - Shut Down Order - March 1986
PROPERTY VALUE IMPACTS	- some farmers not able to sell their property - no vacant houses but a number of absentee landowners and rented houses - impact on property values would be just adjacent to site and definitely contained within 1/2 mile - new residential unit has been constructed directly across road to east of plant	- people can't move out of area because they can't sell their houses to anyone wishing to move into area (economy is depressed in area)
OUT-MIGRATION OF RESIDENTS		- more people moving in since 1984 as it is a new area of subsidized housing; therefore attraction to area in spite of Rollins - people wishing to move out can not sell home
ATTRACTION OF INDUSTRY	- Tricil has positive effect on local industry since there is no midnight dumping, more recycling and proper treatment of waste	- depressed economic area in midst of petrochemical layoffs

TRICIL (Sarnia, Ontario) cont'd

MITIGATION AND COMPENSATION MEASURES

- facility contributes fair amount of employment to local municipality: 20 in Head Office (Sarnia), 100 in plant (Moore Township)
- member of Lambton Industrial Society - contributes to funding emergency response training courses and poison control computer index for Sarnia General Hospital
- Tricil has a fund to enable the provision of fresh water to neighbours of the site in the event of contamination
- Tricil to supply a financial security program to guarantee contingency and remedial action measures when required

MONITORING

- internal monitoring system: maintenance/ security patrol circles property at least each hour
- for 30 years after completion surface and subsurface waters will be monitored at site
- semi-annual sampling and analysis program

LIAISON COMMITTEES - PUBLIC RELATIONS

a) Tricil Liaison Committee
- meeting every 2 months to exchange information on emissions from the facility as well as anything else of relevance to overall operation of facility

b) Lambton Anti-Pollution Committee
- 2 non-company Tricil Liaison Committee members also on Lambton Committee

c) Chemical Valley Emergency Response Coordinating Committee
- representatives from industry, local municipalities and public at large
- helps develop and maintain a community awareness and emergency response plan for residents, including evacuation and/or containment

d) Lambton Industrial Society
- 13 largest chemical plants in Sarnia area are members

ROLLINS (Baton Rouge, Louisiana) cont'd

- Rollins may install air conditioning for community centre

- number of occasions when community has asked for monitoring and warning equipment; turned down due to lack of funds
- Rollins has no monitoring for discharges
- community not involved in monitoring other than reporting their complaints

TRICIL (Sarnia, Ontario) cont'd

PUBLIC ROLE

- Committee involvement (see above)
- publish and distribute a periodic newsletter throughout Moore Township (describes activity of Tricil as well as issues relevant to operation of facility and its relationship with community)

EMERGENCY RESPONSE ARRANGEMENTS

- Chemical Valley Emergency Response Coordinating Committee (see Liaison Committees - Public Relations, above)
- poison control computer index at Sarnia General Hospital
- access routes in area are marked with emergency route signs as well as signs indicating prohibition of waste transport on particular township roads
- whenever a spill occurs off Tricil property, MOE often calls Tricil staff in to clean up

RESIDENTS CONCERNS AND PERCEPTION OF IMPACTS

- concerns about long-term health effects (need health studies and monitoring of leachate, with information being made available to public)
- concern over Tricil constructing a rotary kiln to dispose of additional types of waste
- there are still numerous impacts not being effectively dealt with
- concern over importing of waste from U.S.
- possible contamination of water for domestic use
- need for domestic water supply alternatives
- transportation of wastes through built-up areas
- effects of waste treatment activity in region on property values
- feel proponent should be more open and honest and admit they are affecting the area and then begin to work with the community to deal with impacts
- Liaison Committee seen by some as being a puppet because it has no access to funds or data

ROLLINS (Baton Rouge, Louisiana) cont'd

- all industries have own fire departments on-site plus back-up arrangements with Town of Baker
- Town of Baker has fire department with volunteers who operate an emergency rescue service
- no emergency response or evacuation plan for school or community due to State's lack of funds

- frequent changes in management, therefore no continuity of individuals to talk to and try to have commitments enforced
- concern that PCB concentrations are higher in area, especially in drainage ditches flowing out of Rollins property
- disposing of waste from other states and countries
- concern that Rollins alters records and logs
- concern that many trucks and tank cars are buried on property, some containing PCBs
- people do not trust Rollins, the government or government officials, and they see no justice in terms of their relationship with large industry

	ROLLINS (Deer Park, Texas)	STABLEX (Blainville, Quebec)
DESCRIPTION OF FACILITIES	- 100m stack primarily used for incineration of PCB's, some limited chemical treatment, and landfill which serves surrounding industries - neutralization, precipitation, biological treatment processes	- processes waste from Quebec, Ontario and Northeast U.S. - physical chemical treatment and landfill facility - incinerator (local opposition) - approval for handling earth and wastes that are contaminated with PCB's to a concentration of 10 parts/million - operating at estimated 20-40% of capacity - opened 1983
CHARACTER OF AREA	- within a huge sprawling chemical valley, many refineries and chemical companies much larger than Rollins - area consists of the municipalities of Deer Park, Pasadena and La Porte - population largely working class and employed by petrochemical industry	- commuter suburb of Montreal - described as 'one of the fastest growing areas in Quebec'
NEAREST RESIDENTIAL AREA		- housing in new subdivisions within a few hundred metres of industrial park and the Stablex facility - most residents commute to Montreal
NEARBY COMMUNITY AND RECREATION FACILITIES		- municipality is developing a new city centre in the area to north and west of Stablex - there are regulations concerning buffer zones between industry and housing; these zones are to be dedicated for various community spaces and activities

	ROLLINS (Deer Park, Texas) cont'd	STABLEX (Blainville, Quebec) cont'd
IMPACTS EXPERIENCED	- odours from industrial area (not necessarily Rollins), especially in January and February when winds come from the north - the Texas Air Control Board has received only 2 complaints about Rollins in past 3 years - complaints in 1981 about skin rashes, but after investigation problem was not attributed to Rollins - prior to Rollins purchasing the facility, there were complaints about odour as a result of poor storage of materials	- only problem since opening has been a spill on Highway 15; valve broke on a truck because of a minor collision - spill quickly cleaned with no negative effects
PROPERTY VALUE IMPACTS		- land values have more than doubled since 1980; some areas of Blainville as much as 300% - because of related industrial park developments, tax rates in Blainville have decreased
OUT-MIGRATION OF RESIDENTS	- most move out only for health reasons (i.e. allergies) - most see area as an employment centre and live in Deer Park by choice	- no noted out-migration
ATTRACTION OF INDUSTRY	- benefits many of the surrounding industries and any coming in	- municipality wished to bring Stablex in as an anchor for a proposed industrial park (250 acres) - Stablex could be seen as a catalyst for some of the positive growth and development in area

	ROLLINS (Deer Park, Texas) cont'd	STABLEX (Blainville, Quebec) cont'd
MITIGATION AND COMPENSATION MEASURES	- pays grant-in-lieu-of-taxes (about 40% of appraised value of facility) on a seven year cycle - some tax revenue paid to Harris County and school districts - must provide own sewer, fire protection and water services - Rollins must provide Texas Air Control Board with emission inventories and meet higher or more stringent standards than other industries regulated by EPA	- Stablex is big contributor to municipality via its assessment and taxes - Blainville taxpayers pay 3¢/$100 of assessment, Stablex pays 6¢/$100 of assessment - this additional money contributes to overall development of municipality - plant has created 40-45 labour jobs and 15 technical specialist jobs - many filled by Blainville or area residents - attraction of provincial funding
MONITORING	- Rollins fined more than $21,000 for violations of State regulations with respect to monitoring and control of leachate but there has been few violations by Rollins - Rollins must have incinerator tested annually for destruction efficiency	- Ministry of the Environment responsible for monitoring Stablex, with officials often working out of an MOE office on Stablex site; monitor wastes coming into facility as well as monitoring for leachate at landfill cells - see 'Liaison Committees, Public Relations'
LIAISON COMMITTEES - PUBLIC RELATIONS	- 'Community Awareness and Emergency Response' program - emergency management team - mutual protection pact See 'Emergency Response Arrangements'	- committee of citizens, officials from MOE, Town and Stablex established to deal with concerns and problems - committee was intended to continue with some monitoring once the company began production - now dormant - citizens committee - met every month prior to establishment of plant and then began meeting on three month basis - now non-existent since there has been no complaints about Stablex operation
PUBLIC ROLE	- see above	- committee involvement (see above) - Stablex permits and encourages residents to tour the plant and to have a good understanding of its operations - buys advertising space in local publications

ROLLINS (Deer Park, Texas) cont'd	STABLEX (Blainville, Quebec) cont'd
EMERGENCY RESPONSE ARRANGEMENTS	
- Community Awareness and Emergency Response (C.A.E.R.) program - sponsored by Chemical Manufacturers Association *and Texas Chemical Council with local* officials - provides information on how to secure your safety in a chemical emergency (no monitoring)	- there is an emergency measures department which is briefed on responding to potential emergencies - *local firemen were sent for training on how* to handle chemical spills
RESIDENTS CONCERNS AND PERCEPTION OF IMPACTS	
- skeptical about number of incidents that Rollins is reporting - still not sure about what really comes from stack - opposition to burning someone else's waste in their neighbourhood, especially PCB's	- wondering what will happen if Stablex works at 100% capacity - concern about new housing development close to Stablex facility

OTHER EXISTING HAZARDOUS WASTE MANAGEMENT FACILITIES FOR WHICH BACKGROUND DATA WAS GATHERED

•	BKK Landfill	West Covina, California
•	Chem Security	Arlington, Oregon
•	Chem Waste Management Inc.	Emelle, Alabama
•	Rollins Environmental Services Inc.	Bridgeport, New Jersey
•	SCA Chemical Waste Services Inc.	Model City, New York
•	SCA Chemical Waste Services Inc.	Lewiston, New York
•	SCA Chemical Waste Services Inc.	Chicago, Illinois

APPENDIX D

RESEARCH INSTRUMENTS

APPENDIX D

RESEARCH INSTRUMENTS

The contents of this Appendix are presented as follows:

- Resident Interview Form
- On-Site Resident Interview Form
- Access Route Drop-off Survey Form

INTERVIEW ID NUMBER ______

OWMC PHASE 4B

INTERVIEW FORM

THE PURPOSE OF THE INTERVIEW

The purpose for this interview is to collect information from residents who live on and in the area of OWMC's preferred site. This information, in combination with other information, will be used to assess the social, agricultural and economic impacts of the OWMC waste treatment facilities.

Date: ______________________ Time: ____________

Interviewer(s): ______________________

____

Respondent's Name: ______________________

Address: ______________________

____

____

Lot: ________ Concession: ______________________

Township: ______________________

Telephone: ______________________

Assessment Roll Numbers:

On-Site ☐	Adjacent ☐	Vicinity ☐
________	________	________
________	________	________
________	________	________

INTERVIEWER NOTE: *Confirm that the individual being interviewed is the same as the respondent noted above.*

The respondent should be told that this information will be used in a discreet manner and presented in aggregate form only. OWMC will not volunteer, disclose or attribute information of a personal, confidential or private nature; however, the information might become subject to disclosure if OWMC is so ordered by the hearing officers.

Also, the respondents should be told that we appreciate their cooperation and they need not feel obligated to answer all or any questions.

INTERVIEW ID NUMBER ______

A. RESIDENCY

* 1. How many years have you lived at this address?

INTERVIEWER NOTE: Show respondent the card

☐ 1. Less than one year
☐ 2. 1-2 years
☐ 3. 3-5 years
☐ 4. 6-10 years
☐ 5. 11-15 years
☐ 6. 16-20 years
☐ 7. More than 20 years
☐ 8. Always lived here

* 2. How long have you lived in West Lincoln?

INTERVIEWER NOTE: This question refers to their total lifetime. Show respondent the card.

☐ 1. Less than one year
☐ 2. 1-2 years
☐ 3. 3-5 years
☐ 4. 6-10 years
☐ 5. 11-15 years
☐ 6. 16-20 years
☐ 7. More than 20 years
☐ 8. Always lived in West Lincoln

Q. 4

* 3. Were you aware that OWMC was considering a site in this area prior to moving here?

YES ☐ 1. NO ☐ 2.

Comments: ______________________________

* 4. Is this dwelling:
☐ 1. owned or being bought by you or a member of this household?
☐ 2. rented (even if no cash rent is paid)?

* 5. Was this property owned by another member of your family before you moved here?

YES ☐ 1. NO ☐ 2.

If yes, how many years has this property been owned by members of your family? ________ years

* 6. Did any of your ancestors live elsewhere in West Lincoln?

YES ☐ 1. NO ☐ 2.

If yes, approximately how many years and generations has your family lived in West Lincoln? ______ years
______ generations

* 7. Is your house or property used for any business activity including farming?

YES ☐ 1. NO ☐ 2. Q. 14

* 8. Do you own this business?

YES ☐ 1. NO ☐ 2. Q. 10

* 9. If yes, are you the sole owner of this business?

YES ☐ 1. Q. 11 NO ☐ 2. Q. 10

* 10. Please identify the owner(s) (or other owner(s)) of the business.
Name ______________________________
Address ______________________________
Telephone: __________ ____________________

* 11a. What type of business?

***INTERVIEWER NOTE:** If respondent uses property for more than one business, note all businesses and ask Question 11b.*

Farm ______ 1.

Agri-Business
Custom Work ______ 2.
Horse Training ______ 3.
Horse Boarding ______ 4.
Slaughter House ______ 5.
Equipment Sales and Service ______ 6.
Construction ______ 7.
Feed Mill ______ 8.
Other (write in)
______________ ______
______________ ______

Other Business
Real Estate ______ 21.
Antiques ______ 22.
Furniture Manufacturing/Refinishing ______ 23.
Crafts ______ 24.
Insurance ______ 25.
Other (write in)
______________ ______
______________ ______

* 11b. Which is your main business? ______________________________

***INTERVIEWER NOTE:** If this is their own business, ask Questions 12 and 13. If not, go to Question 14.*

INTERVIEW ID NUMBER ______

* 12. Would you provide us with your estimated annual gross business income? ______

* 13. Would you provide us with your estimated annual net business income? ______

* 14. Do you rent your property to others for business activities or farming?

YES ☐ 1. NO ☐ 2. Q. 17

* 15. For what purpose(s) do they use your property? ______

______

______

______

* 16. Who rents your property?
Name ______
Address ______
Telephone ______

* 17. Other than people living in this household, do any individuals or groups use this property for any social or recreational activities on a regular basis?

YES ☐ 1. NO ☐ 2.

If yes, for what activities? ______

______

______

Who uses your property? General Public (check) ☐

Group ______
Name of contact ______
Address ______
Telephone ______

Group ______
Name of contact ______
Address ______
Telephone ______

Group ______
Name of contact ______
Address ______
Telephone ______

***INTERVIEWER NOTE:** If respondent's property is farmed, ask Question 18 to 50. If not, go to Section I Question 51.*

Questions 18 through 50, inclusive, were administered to farm operators only and used in the agricultural impact assessment by Ecologistics. (For a copy of these questions refer to Ecologistics Ltd., 1988)

INTERVIEW ID NUMBER ______

I. USE AND ENJOYMENT OF PROPERTY

We would like information about how you use your property for social and recreational activities.

* 51. During previous stages of the site selection process residents living near the proposed hazardous waste management facility sites expressed concern about the possible effects of the OWMC facility. Do you have any concerns if the OWMC facility is built in West Lincoln, and if so, what are your concerns?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, specify concerns. ______

INTERVIEW ID NUMBER ______

52. Do you or other members of your household currently use your property for any of the following outdoor social and recreational activities?

INTERVIEWER NOTE: Provide card listing activities.

If the OWMC facility is built in West Lincoln, which activities, if any, do you think would be affected and how do you think they would be affected?

INTERVIEWER NOTE: Probe for details on how activities would be affected.

Check Activities Here a	Would Be Affected			Effects c
	Yes	No b	Don't Know	
☐ 1. Swimming	☐	☐	☐	______
☐ 2. Gardening	☐	☐	☐	______
☐ 3. Entertaining Friends and Relatives	☐	☐	☐	______
☐ 4. Snowmobiling	☐	☐	☐	______
☐ 5. Cross-Country Skiing	☐	☐	☐	______
☐ 6. Family Barbeques	☐	☐	☐	______
☐ 7. Children's Activities	☐	☐	☐	______
☐ 8. Hunting	☐	☐	☐	______
☐ 9. Fishing	☐	☐	☐	______
Other (specify)				
☐ ______	☐	☐	☐	______
☐ ______	☐	☐	☐	______
☐ ______	☐	☐	☐	______

INTERVIEW ID NUMBER ______

* 53. Have you made any improvements to your property since September, 1985?

YES ☐ 1.   NO ☐ 2.

If yes, please specify ______

* 54. Did you have any plans to improve your property that you have put on hold due to OWMC's announcement of its proposed site?

YES ☐ 1.   NO ☐ 2.

If yes, please specify. ______

55. Do you have any plans to improve or change how you use your home or property in the future?

YES ☐ 1.   NO ☐ 2. **Q. 57**

If yes, specify ______

56. Would the OWMC facility affect these plans in any way?

YES ☐ 1.   NO ☐ 2.   DON'T KNOW ☐ 3.

If yes, in what way(s)? ______

INTERVIEW ID NUMBER ______

J. SATISFACTION WITH COMMUNITY

The next few questions will provide us with an idea of how satisfied you are with this area as a place to live and what you like and/or dislike about the area. When you respond, we would like you to think about how you felt about this area prior to the announcement of OWMC's preferred site in West Lincoln.

* 57. Generally, how satisfied were you with this area as a place to live?

INTERVIEWER NOTE: Show respondent the card

Very Dissatisfied				Very Satisfied
1	2	3	4	5

* 58. What were the three most important characteristics you liked about this area?

____

____

____

____

____

____

____

____

* 59. On this card are some possible characteristics that may make a community a satisfying place to live. Which of these characteristics, if any, do you like most about this area?

INTERVIEWER NOTE: Show respondent the card and check as many as applicable.

Good place to raise children	☐ a
Friendly people	☐ b
Attractive area	☐ c.
Large properties	☐ d
Open space	☐ e
Peace and quiet	☐ f
Safety	☐ g
Pace of life	☐ h.
Values of the community	☐ i.
Accessibility to work, school, etc.	☐ j.
Accessibility to friends	☐ k
Way of life	☐ l
Clean air	☐ m.
Traffic	☐ n.
Quality of schools	☐ o.
Cooperation among neighbours	☐ p.
Absence of industrial development	☐ q.

INTERVIEW ID NUMBER ________

* 60. On this card are some additional characteristics that could sometimes be a problem in a community. Do you find any of these to be a problem in this area?

INTERVIEWER NOTE: Show respondent the card and check as many as applicable.

Accessibility to places you want to go to	☐ 1.
Traffic	☐ 2.
Neighbours	☐ 3.
Lack of upkeep of neighbouring properties	☐ 4.
Odours (e.g., manure application)	☐ 5.
Dust	☐ 6.
Noise	☐ 7.
Water quality	☐ 8.
Lack of political clout	☐ 9.
Lack of population	☐ 10
Other (specify)	
________________	☐
________________	☐
________________	☐

* 61. The following is a list of services provided in most communities. Please rate the quality of these services in your community in terms of whether they are very good, good, adequate, poor or very poor.

INTERVIEWER NOTE: Show respondent the card

		Very Good 1.	Good 2.	Adequate 3.	Poor 4.	Very Poor 5.	Don't Know/ No Opinion 6.
Police Protection	a.	☐	☐	☐	☐	☐	☐
Fire Protection	b.	☐	☐	☐	☐	☐	☐
Quality of Schools	c.	☐	☐	☐	☐	☐	☐
Recreational Facilities and Services	d.	☐	☐	☐	☐	☐	☐
Medical and Health Facilities	e.	☐	☐	☐	☐	☐	☐
Shopping Facilities for Daily Needs	f.	☐	☐	☐	☐	☐	☐
Maintenance of Regional Roads	g.	☐	☐	☐	☐	☐	☐
Maintenance of Township Roads	h.	☐	☐	☐	☐	☐	☐

62. Do you think that OWMC's facility would affect your satisfaction with West Lincoln as a place to live?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, in what way? ____

____

____

____

____

____

63. For this question, assume that the OWMC facility will not be built here. If you had to move from this property and were presented with the option of relocating in West Lincoln or elsewhere, would you stay in West Lincoln?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

64 Since OWMC announced its proposed site in West Lincoln, have you considered moving because of the proposed facility?

YES ☐ 1. NO ☐ 2 **Q. 66**

65. Have you taken any steps towards moving such as contacting a real estate agent or putting your property up for sale?

YES ☐ 1. NO ☐ 2

If yes, what steps have you taken?

66. If OWMC's proposed facility is built here, would you move?

YES ☐ 1 NO ☐ 2. **Q. 68** DON'T KNOW ☐ 3. **Q. 68**

If yes, where would you move? ______

67. If you have considered moving, are there any reasons why you would be reluctant to move or do you foresee any problems that would make it difficult for you to move?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, please specify. ______

INTERVIEW ID NUMBER ________

K. COMMUNITY COHESION AND INVOLVEMENT

* 68. Think of your three closest friends and tell me how many live in West Lincoln.

One ☐ 1. Two ☐ 2. Three ☐ 3. None ☐ 4.

* 69. Do you have relatives living in West Lincoln other than those in this household?

YES ☐ 1. NO ☐ 2

* 70. How often do you entertain neighbours in your home or are entertained by your neighbours in their home?

INTERVIEW NOTE: Show respondent the card

Never	☐ 1.
Once a year	☐ 2.
Four times a year	☐ 3.
Monthly	☐ 4.
Weekly	☐ 5.
Daily	☐ 6.

* 71. How often do you help any neighbour or ask for help from any neighbour such as borrowing tools or food, watching each other's houses while away, providing rides for each other when car is not working or helping each other in house repairs, farm chores, etc.?

INTERVIEW NOTE: Show respondent the card

	Non-Farm Help a.	Help With Farm Work b.
1. Never	☐	☐
2. Once a year	☐	☐
3. Four times a year	☐	☐
4. Monthly	☐	☐
5. Weekly	☐	☐
6. Daily	☐	☐

* 72. Are you or any other members of your household presently active members of community groups or assocations?

INTERVIEWER NOTE: Community groups and associations would include the Women's Institute, 4H Club, sports organizations, church groups, etc.

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, please indicate the names of the groups or associations and indicate whether you or household members are presently on the executive of these groups or associations.

	ON EXECUTIVE b.	
a.	YES 1.	NO 2.
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐
______	☐	☐

INTERVIEW ID NUMBER ______

L. USE OF LOCAL FACILITIES

* 73. Do you have any children attending school?

YES ☐ 1. **Q. 74** NO ☐ 2. **Q. 75**

* 74 Do your children attend any of the following schools? Please indicate the number of children who attended each school in the last school year.

INTERVIEWER NOTE: Show respondent the card.

	Number of Children
Gainsborough Elementary School	a. ______
College Street Elementary School	b. ______
Smithville District Christian High School	c. ______
South Lincoln High School	d. ______
St. Martin's Separate School	e. ______
St. Ann Separate School	f. ______
John Calvin School	g. ______
Wellandport Christian School	h. ______
E.L. Crossley High School	i. ______

* 75. Do you or other members of your household attend church services?

REGULARLY ☐ 1. OCCASIONALLY ☐ 2 NEVER ☐ 3.

If regularly or occasionally, at which church?

____

INTERVIEW ID NUMBER ________

76. Assume that the OWMC facility is built in West Lincoln. Because of the operation of the facility, would you change where you go for activities and services such as shopping, recreation or medical and dental services?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, why? ____

INTERVIEWER NOTE: If yes, ask:

Please identify those activities or services for which you would go elsewhere. For each activity or service indicate where you presently go and where you think you would go if OWMC's proposed facility is built.

Activity/Service a.	Presently Go To b.	Would Change to c.

INTERVIEW ID NUMBER ______

M. PUBLIC CONCERNS AND EFFECTS ON INDIVIDUALS

* 77. What was your reaction to the announcement of the preferred OWMC site in West Lincoln?

* 78. How do you feel about the announcement of the preferred OWMC site in West Lincoln now?

* 79. Do you feel that you have had sufficient opportunities to learn about the facility OWMC is proposing to build in West Lincoln?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

* 80 Do you feel that you have had sufficient opportunities to discuss the proposed OWMC facility with

		Yes 1	No 2	Don't Know 3.
OWMC officials/consultants	a.	☐	☐	☐
West Lincoln politicians	b	☐	☐	☐
Other residents in West Lincoln	c	☐	☐	☐

* 81. Do you feel that you and other residents in West Lincoln will be able to influence the final decision regarding whether or not the OWMC facility will be built in West Lincoln?

YES ☐ 1 NO ☐ 2 DON'T KNOW ☐ 3

If no, why do you feel this way? ______

INTERVIEW ID NUMBER ________

* 82. Have you or anyone else in this household been involved in any of the following activities since the announcement of OWMC's proposed site in West Lincoln?

INTERVIEWER NOTE: Show respondent the card and check as many as applicable.

Telephoned/spoken/written to local politicians	☐ 1.
Telephoned/spoken/written to other policitians	☐ 2.
Read OWMC's reports	☐ 3
Attended a meeting organized by the West Lincoln Task Force Against Toxic Waste	☐ 4.
Attended an OWMC Open House	☐ 5.
Attended a meeting organized by West Lincoln Council Toxic Waste Committee	☐ 6.
Visited OWMC's site office in Smithville	☐ 7.
Researched the topic of hazardous waste disposal	☐ 8.
Prepared handouts/flyers, etc., concerning the OWMC facility	☐ 9.
Attended a Council Meeting where the OWMC facility was discussed	☐ 10.
Other (specify) ________	☐
________	☐
________	☐
No actions taken	☐

* 83. In the past year do you feel your life has been more stressful than in the previous year?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, to what do you attribute this stress?

New baby in family	☐ 1.
Illness in the family	☐ 2.
Change in financial situation	☐ 3.
Moved to a new house	☐ 4.
Death in the family	☐ 5.
Began a new job	☐ 6.
Change in marital status	☐ 7.
Job demands increased	☐ 8
Unemployment	☐ 9.
Announcement of OWMC's proposed site	☐ 10.
Other (specify) ________	☐
________	☐
________	☐

INTERVIEW ID NUMBER ______

* 84 Assume that the OWMC facility will be built in West Lincoln. Based on what you currently know about the facility please tell me how much you agree or disagree with each of the following statements.

INTERVIEWER NOTE: Show respondent the card.

		Strongly Disagree 1	Disagree 2	Neither Agree Nor Disagree 3	Agree 4	Strongly Agree 5	Don't Know 6
a)	People will buy crops grown around the site	☐	☐	☐	☐	☐	☐
	Comment						
b)	There is a risk to the health of residents living near the site	☐	☐	☐	☐	☐	☐
	Comment						
c)	There is a risk of a transportation accident involving a spill	☐	☐	☐	☐	☐	☐
	Comment						
d)	There is a potential for ground and surface water contamination	☐	☐	☐	☐	☐	☐
	Comment						
e)	There is a risk of contamination of crops and livestock	☐	☐	☐	☐	☐	☐
	Comment						
f)	OWMC's proposed technology will safely dispose of hazardous waste	☐	☐	☐	☐	☐	☐
	Comment						
g)	The operators of the facility can be relied upon to safely operate it	☐	☐	☐	☐	☐	☐
	Comment						
h)	Monitoring by the community will relieve my concerns about the safety of the facility	☐	☐	☐	☐	☐	☐
	Comment						

INTERVIEW ID NUMBER ________

85. During previous stages of the site selection process, residents living near the proposed sites expressed concern about the possible effects of the OWMC facility. We would like to find out if you share these concerns. Based on what you currently know about the facility, would you indicate whether you think your household would be affected:

INTERVIEWER NOTE: Show respondent the card

		Yes 1	No 2	Don't Know 3.
a.	Noise from facility operations	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		
b.	Odours from facility operations	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		
c.	Dust from landfill operations	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		
d.	Use of outdoor lights on-site all night	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		
e.	Facility truck traffic on Vineland Road and Highway 20	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		
f.	Being able to see an industrial facility	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		
g.	air and water pollution	☐	☐	☐
	changes to household	________		
	changes to farm	________		
		________		

For each of the events that you think will affect your household, please describe how such a change would cause you to change your household [and farming] activities.

INTERVIEWER NOTE: For each of the events noted as potentially affecting the household, use the space provided to note the changes.

INTERVIEW ID NUMBER ________

86. Do you think your property value would change if the facility is built?

YES ☐ 1.   NO ☐ 2.   DON'T KNOW ☐ 3.

If yes, do you think it will increase or decrease?

Increase ☐ 1.   Decrease ☐ 2.   Don't Know ☐ 3.

87. How would a change in property value affect you?

____
____
____
____
____
____

* 88. Of the following potential effects, please indicate whether you think each will or will not occur. ***(INTERVIEWER NOTE: If respondent feels the impact will occur, ask:)***
How much of a benefit or detriment do you think each impact is likely to be for West Lincoln residents?
INTERVIEWER NOTE: Show respondent the card.

	Will Occur	Will Not Occur	Don't Know	Very Detrimental		Neither Beneficial Nor Detrimental	Very Beneficial	
a.	1	2	3	b 1	2	3	4	5
a. Local residents leaving the Township	☐	☐	☐	☐	☐	☐	☐	☐
Comments								
b. New jobs for Township residents	☐	☐	☐	☐	☐	☐	☐	☐
Comments								
c. Additional tax revenues for the Township	☐	☐	☐	☐	☐	☐	☐	☐
Comments								
d. OWMC employees and their families moving to the Township	☐	☐	☐	☐	☐	☐	☐	☐
Comments								
e. New industry attracted to the Township	☐	☐	☐	☐	☐	☐	☐	☐
Comments								

INTERVIEW ID NUMBER ________

* 89. There may be other effects not mentioned above that are of concern to you. If there are, would you describe them and indicate how they would affect you.

____

____

____

____________________ ____________________

____

* 90. Please indicate how important you feel each of the following steps is to protect the interests of residents in West Lincoln if the OWMC facility is built here.

		Not Important 1	2	3	4	Very Important 5	Don't Know 6
a.	Community monitoring of public health	☐	☐	☐	☐	☐	☐
b.	Regular public reports on facility operations	☐	☐	☐	☐	☐	☐
c.	Compensation for direct costs and damages	☐	☐	☐	☐	☐	☐
d.	Monitoring of air and water quality	☐	☐	☐	☐	☐	☐
e.	Compensation for municipal costs	☐	☐	☐	☐	☐	☐
f.	Monitoring of on-site operations	☐	☐	☐	☐	☐	☐
g.	Improvements in local fire protection and emergency services	☐	☐	☐	☐	☐	☐
h.	Compensation for loss of land values	☐	☐	☐	☐	☐	☐
i.	Monitoring of contaminants in soils, crops and livestock	☐	☐	☐	☐	☐	☐
j.	Local residents represented on a Committee to monitor operations	☐	☐	☐	☐	☐	☐
k.	Monitoring of economic factors (e.g., land values, farm sales, etc.)	☐	☐	☐	☐	☐	☐

* 91. Other than these steps is there anything else that OWMC should consider doing to protect the interests of local residents?

* 92. Of all the steps you've mentioned in Questions 90 and 91, what do you feel are the three most important steps that OWMC can take to protect the interests of residents in West Lincoln?

INTERVIEW ID NUMBER ______

N. INFORMATION CONCERNING THE OWMC FACILITY

* 93. In general, from where do you get most of your information about the proposed OWMC facility and the site selection process?

INTERVIEWER NOTE: Show respondent the card. Check as many as applicable.

Newspapers ☐ 1.
TV/Radio ☐ 2.
Neighbours ☐ 3.
School Discussions ☐ 4.
West Lincoln Task Force Against Toxic Waste ☐ 5.
West Lincoln Council Municipal Representative ☐ 6.
West Lincoln Council Toxic Waste Committee ☐ 7.
OWMC Open Houses/Meetings ☐ 8.
OWMC Reports/Press Releases ☐ 9.
OWMC Site Office in Smithville ☐ 10.
Statements of Public Officials ☐ 11.
Other (specify) ______ ☐ 12.
______ ☐ 13.
______ ☐ 14.

* 94. Have you received any information directly from OWMC concerning the proposed facility or the reasons for selecting a site in West Lincoln?

YES ☐ 1. NO ☐ 2. **Q. 96** DON'T KNOW ☐ 3.

* 95. Did this information help you to understand:

		Yes 1.	No 2.	Don't Know 3.
the facility proposed by OWMC?	a.	☐	☐	☐
the reasons why a site was selected in West Lincoln?	b.	☐	☐	☐

If no to either of the above, why wasn't the information useful?

______
______
______
______

INTERVIEW ID NUMBER ______

* 96. Is there any information you would like OWMC to provide?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, what information do you require? ______

* 97. Can you suggest ways in which OWMC could improve the information it provides to you?

YES ☐ 1. NO ☐ 2. DON'T KNOW ☐ 3.

If yes, how could improvements be made? ______

INTERVIEW ID NUMBER ________

D. HOUSEHOLD CHARACTERISTICS

* 98. How many adults 18 years of age or over are living in this household? ________

* 99. How many were born in West Lincoln? ______________

* 100. How many children under 18 years of age are living in this household? ________

* 101. How many were born in West Lincoln? ______________

* 102. To which age group does each member of your household belong?

INTERVIEWER NOTE: Show respondent the card.

	Age Group
Person a (respondent)	________
Person b	________
Person c	________
Person d	________
Person e	________
Person f	________
Person g	________
Person h	________

* 103. Using the categories on this card, please indicate the category that best describes the level of education of each household member 18 years of age or over.

INTERVIEWER NOTE: Give card to respondent

		Person a (respondent)	Person b	Person c	Person d	Person e	Person f
Some elementary	1.	☐	☐	☐	☐	☐	☐
Elementary	2.	☐	☐	☐	☐	☐	☐
Some high school	3.	☐	☐	☐	☐	☐	☐
High school	4.	☐	☐	☐	☐	☐	☐
Some university	5.	☐	☐	☐	☐	☐	☐
University degree	6.	☐	☐	☐	☐	☐	☐
Some community college	7.	☐	☐	☐	☐	☐	☐
Community college degree or diploma	8.	☐	☐	☐	☐	☐	☐

* 104. We would like some information concerning the occupation and place of employment of the people living in this household. Please answer the following questions for each person living in this household who is of working age.

INTERVIEWER NOTE: Person A is the respondent

INTERVIEWER NOTE: If someone lives in the household part-time, such as a university student living away from home, exclude them from this question. We are specifically concerned with those who are "full-time" residents of the household. If a person has more than one occupation, list each occupation in the space provided. If one occupation is the person's major occupation, identify it with an asterisk (*). If the person is unemployed, indicate this beside their occupation.

	What is the person's relationship to you? a.	What is the person's occupation(s)? b.	In which municipality do they work? **(INTERVIEWER NOTE:** ***We are only concerned with the municipality (city/town/township) where the person works.)*** c.
Person A (respondent)	Not applicable	______	______
Person B	______	______	______
Person C	______	______	______
Person D	______	______	______
Person E	______	______	______
Person F	______	______	______

INTERVIEW ID NUMBER ______

* 105. To which ethnic or cultural group do you belong?

INTERVIEWER NOTE: Give card to the respondent

English	☐ 1.
Scottish	☐ 2.
Irish	☐ 3.
French	☐ 4.
Dutch	☐ 5.
Greek	☐ 6.
Italian	☐ 7.
German	☐ 8.
Scandinavian	☐ 9.
Ukranian	☐ 10.
Polish	☐ 11.
Native Indian or Metis	☐ 12.
Other (specify) ______________	☐

* 106. Using the categories on this card, please indicate the category that best describes the total yearly income for your household.

INTERVIEWER NOTE: Give card to respondent

Under $10,000	☐ 1
$10,000-$14,999	☐ 2
$15,000-$19,999	☐ 3.
$20,000-$24,999	☐ 4
$25,000-$29,999	☐ 5.
$30,000-$39,999	☐ 6.
$40,000-$49,999	☐ 7.
$50,000 and over	☐ 8.
Don't Know	☐ 9.

* 107. Do you rent a portion of this dwelling or any other dwelling on this property to anyone else?

YES ☐ 1. NO ☐ 2

If yes, please identify the person(s) to whom you rent:

Name ______________________________
Address: ______________________________
Telephone: ______________________________

INTERVIEW ID NUMBER ______

* 108. Do you have any other comments?

INTERVIEWER NOTE: Use this space to record comments.

ADDENDUM 1
RESIDENTS ON ACCESS ROADS

***INTERVIEWER NOTE:** These questions are only to be asked if the property on which the respondent resides abuts Highway 20 or Regional Road 24.*

The designated truck route for deliveries to the facility will be from the Q.E.W., along Regional Road 24 through Vineland and west on Highway 20 to the site. The OWMC facility will result in the addition of approximately 20 trucks per hour during normal working hours Monday to Friday. The trucks will be delivering hazardous waste or materials that will be used in the treatment of the waste.

The following questions are to assist us in evaluating the effects of the resulting increased truck traffic on Regional Road 24 and Highway 20.

1. Do you have any concerns with the current traffic movement that passes by your house?

   YES ☐ 1. NO ☐ 2.

2. If yes, what are your concerns?

3. Do you have any concerns about the truck traffic that would be added as a result of the OWMC facility?

   YES ☐ 1. NO ☐ 2.

   If yes, what are your concerns?

INTERVIEW ID NUMBER ______

4. Do you or other members of your household currently use the roadway shoulder for any of the following activities?

INTERVIEWER NOTE: Show respondent the card.

	Check if yes
Bicycle riding	☐ 1.
Walking for pleasure	☐ 2.
Walking to a friend's house	☐ 3.
Horseback riding	☐ 4.
Snowmobiling	☐ 5.
Walking to shopping	☐ 6.
Walking to school	☐ 7.
Waiting for school bus	☐ 8.
Other (please specify)	☐

______

______

5. Would the additional OWMC related truck traffic affect your use of the roadway area for any of the above activities?

YES ☐ 1. NO ☐ 2.

If yes, which activities and how would they be affected?

Activity a.	Effect b.

6. If the OWMC facility is built in West Lincoln, what could OWMC do to help deal with your concerns about traffic?

______
______
______
______
______
______
______
______
______
______

ON-SITE RESIDENT INTERVIEWS

Generally, on-site residents were asked the same questions as residents in the local community. The questions administered to on-site residents have been denoted with a star (*) in the left margin of the resident interview form.

On-site residents were asked three additional questions:

- #83: How could OWMC compensate your household for having to relocate?
- #84: Do you feel there are any steps OWMC could take to make the relocation process easier for you?
- #85: How do you feel the experience of having to relocate will affect your household?

Three questions from the resident interview form were revised for the on-site resident interviews[1]:

- #52 (#52): Do you or other members of your household currently use your property for any of the following outdoor social and recreational activities?

  1. Swimming
  2. Gardening
  3. Entertaining Friends and Relatives
  4. Snowmobiling
  5. Cross-country Skiing
  6. Family Barbeques
  7. Children's Activities
  8. Hunting
  9. Fishing
  10. Other ____________

     ____

     ____

---

[1] All question numbers refer to those found in the On-Site Resident Interviews; the number of the corresponding question in the Phase 4B Resident Interviews is shown in parentheses where relevant.

- #60 (#66): If OWMC's facility is built on this site in West Lincoln, where will you relocate?

  1. Within West Lincoln

  2. Within Niagara Region

  3. Other (please specify)

- #61 (#67): Are there any reasons why you would be reluctant to move or do you foresee any problems that would make it difficult for you to relocate?

  Yes No Don't Know

  If yes, please specify: ______________________
  ____
  ____

INTERVIEW ID NUMBER ____

OWMC PHASE 4B
DROP-OFF QUESTIONNAIRE

Questionnaire Instructions

1. Please do not write in the coding bar section at the bottom of each page as this section is for office use only
2. The respondent must be 18 years of age or older

Your Name ______________________________

Address: ______________________________
____

Telephone No ____________________

INTERVIEW ID NUMBER ______

ACCESS ROUTE SURVEY

The Ontario Waste Management Corporation (OWMC) has proposed a site on Highway 20 in West Lincoln for its industrial and hazardous waste management facility. The designated truck route for deliveries to the facility would be from the QEW, along Regional Road 24 through Vineland and west on Highway 20 to the Schram Road sites. The OWMC trucks would carry hazardous waste and other non-hazardous materials used in the waste treatment process.

The following questions are to assist us in evaluating the effects of the resulting increased truck traffic on Regional Road 24 and Highway 20.

1. During earlier phases of the study process, concerns were expressed by residents living along the access route about **EXISTING** traffic conditions on Regional Road 24.

   Below is a list of concerns about the **EXISTING** traffic movement and road conditions along Regional Road 24. From this list, please indicate how important each of these concerns is to you.

	Very Important Concern 1	Important Concern 2	Minor Concern 3	Not a Concern 4
1 Trucks exceeding speed limit	☐	☐	☐	☐
2 Cars exceeding speed limit	☐	☐	☐	☐
3 Conflicts between farm machinery and other vehicles	☐	☐	☐	☐
4 Safety of farm animals crossing the road	☐	☐	☐	☐
5 Safety of cyclists	☐	☐	☐	☐
6 Conflicts between school buses and other vehicles	☐	☐	☐	☐
7 Safety of pedestrians using the shoulder of the road	☐	☐	☐	☐
8 Dust from traffic	☐	☐	☐	☐
9 Noise from traffic	☐	☐	☐	☐
10 Structural damage due to truck vibrations	☐	☐	☐	☐
11 Lack of pedestrian crossings	☐	☐	☐	☐
12 Poorly marked pedestrian crossings	☐	☐	☐	☐
13 Speed limit too high	☐	☐	☐	☐
14 Difficult access to private driveways because of traffic	☐	☐	☐	☐
15 Inadequate road maintenance	☐	☐	☐	☐
16 Truck accidents resulting in spills	☐	☐	☐	☐
17 Icy road conditions	☐	☐	☐	☐
Other (please specify)				
______________________	☐	☐	☐	☐
______________________	☐	☐	☐	☐
______________________	☐	☐	☐	☐

INTERVIEW ID NUMBER ______

2a The proposed OWMC facility in West Lincoln would result in the addition of approximately twenty trucks per hour on Regional Road 24, during normal working hours, Monday to Friday. Thus, OWMC's truck traffic would represent an estimated 5% increase in the existing daytime hourly traffic volume on Regional Road 24.

Given this potential increase in traffic on Regional Road 24, please indicate how important each of the following concerns is to you.

	Very Important Concern 1	Important Concern 2	Minor Concern 3	Not a Concern 4
1 Possible increase in number of traffic accidents	☐	☐	☐	☐
2 Conflicts with farm machinery	☐	☐	☐	☐
3 Safety of farm animals crossing the road	☐	☐	☐	☐
4 Safety of cyclists	☐	☐	☐	☐
5 Safety of pedestrians crossing the road	☐	☐	☐	☐
6 Conflicts between school buses and other vehicles	☐	☐	☐	☐
7 Dust from traffic	☐	☐	☐	☐
8 Noise from traffic	☐	☐	☐	☐
9 Structural damage due to truck vibrations	☐	☐	☐	☐
10 Safety of pedestrians using the shoulder of the road	☐	☐	☐	☐
11 Truck accidents resulting in hazardous waste spills	☐	☐	☐	☐
12 Adequacy of emergency response to spills	☐	☐	☐	☐
13 Trucks exceeding speed limit	☐	☐	☐	☐
Other (please specify)				
______________________	☐	☐	☐	☐
______________________	☐	☐	☐	☐
______________________	☐	☐	☐	☐

2b If you would like to elaborate on any of these concerns, please use the space provided below.

____

____

____

____

____

____

____

____

____

____

INTERVIEW ID NUMBER ______

3a Do you or other members of your household use the roadway area (sidewalk, shoulder, roadway) for any of the following activities?

Walking for pleasure	☐1
Walking to a friend's house	☐2
Horseback riding	☐3
Jogging	☐4
Snowmobiling	☐5
Walking to shopping	☐6
Walking to school	☐7
Bicycle riding	☐8
Waiting for school bus	☐9
Other (please specify)	
____________________	☐
____________________	☐
____________________	☐

3b Of the activities you have checked above, do you feel that any of them would be affected in any way, by the addition of OWMC-related traffic? Please identify these activities and describe how you feel they would be affected

Activities	How They Would Be Affected
____________________	______________________________ ______________________________
____________________	______________________________ ______________________________
____________________	______________________________ ______________________________
____________________	______________________________ ______________________________
____________________	______________________________ ______________________________
____________________	______________________________ ______________________________
____________________	______________________________

INTERVIEW ID NUMBER ______

4. Did you have any plans to change or improve your house or property that you have put on hold due to OWMC selecting Regional Road 24 as its preferred access route?

YES ☐ NO ☐

PLEASE NOTE: This includes farm properties

If yes, please specify ________________________________

5. If the OWMC facility is built in West Lincoln, what could OWMC do to address and alleviate your concerns about the addition of OWMC traffic to Regional Road 24?

6. Do you have any additional concerns about effects which may result from the addition of OWMC-related traffic to Regional Road 24?

7. Have you received any information from OWMC concerning the reasons for selecting Regional Road 24 as the preferred access route from the QEW to Highway 20?

YES ☐ NO ☐ DON'T KNOW ☐

INTERVIEW ID NUMBER ______

8 Do you have any concerns, other than those related to transportation, about the OWMC facility that is proposed for West Lincoln?

____
____
____
____
____
____

9 How many people live in your household? ______

10 To which age group does each member of your household belong?

Age Groups:		
	0 - 4	25 - 34
	5 - 9	35 - 44
	10 - 14	45 - 54
	15 - 19	55 - 64
	20 - 24	65 and over

Age

Person #1 ______
Person #2 ______
Person #3 ______
Person #4 ______
Person #5 ______
Person #6 ______
Person #7 ______
Person #8 ______

11 Do you use your house or property for any farming or other business activity?

NO ☐ FARMING ☐ OTHER BUSINESS ☐

12 Is this property used by someone outside of your household for any business or farming activity?

a YES ☐ NO ☐

If yes, please identify the name of the person, their address, telephone number, and type of business or farming activity

b Name: ______________________________
Address: ______________________________
____
Telephone: ______________

c Type of Business or Farming Activity ______________

INTERVIEW NUMBER ____

13 Are there any other comments that you wish to bring to the attention of OWMC?

____
____
____
____
____
____
____
____
____
____
____
____
____

PLEASE NOTE:

If you use your property for farming, please complete the attached Farm Survey. (blue pages)

If you use your property for other business activity, please complete the attached Business Survey. (yellow pages)

INTERVIEW ID NUMBER ____

BUSINESS SURVEY

The **Business Survey** is to be completed only by those households who use their house or property for a business activity other than farming

1 For what type of business do you use your house or property?

Agri-Business	
Fruit and Vegetable Sales	______ 1
Horse Training/Boarding	______ 2
Kennels	______ 3
Farm Equipment Sales and Service	______ 4
Other (write in)	
______________________	______
______________________	______
______________________	______
Other Business	
Real Estate	______ 21
Antiques	______ 22
Furniture Manufacturing/Refinishing	______ 23
Crafts	______ 24
Insurance	______ 25
Construction/Home Improvements	______ 26
Other (write in)	
______________________	______
______________________	______
______________________	______

D.38

INTERVIEW ID NUMBER ______

2. Do the existing traffic conditions on Regional Road 24 affect your business activities in any way?

YES ☐ NO ☐ DON'T KNOW ☐

If yes, which business activities and how are they affected?

Activity	How Affected

INTERVIEW ID NUMBER ______

3. Do you think the addition of OWMC-related traffic would affect your business operation?

YES ☐ NO ☐ DON'T KNOW ☐

If yes, please list the business activities that would be affected and indicate how you feel they would be affected

Activity	How Affected
______	______ ______
______	______ ______
______	______ ______
______	______ ______
______	______ ______

INTERVIEW ID NUMBER ______

FARM SURVEY

The **Farm Survey** is to be completed only by those households who use their property for farming.

1. Do the existing traffic conditions on Regional Road 24 affect your farming activities in any way?

YES ☐ NO ☐ DON'T KNOW ☐

If yes, which farming activities and how are they affected?

Activity	Affected by Traffic		How Affected
	YES	NO	
1. Machinery movement	☐	☐	____________________
2. Service Vehicles	☐	☐	____________________
3. Customer Stops	☐	☐	____________________
4. Raising livestock	☐	☐	____________________
5. Raising poultry	☐	☐	____________________
6. Growing crops	☐	☐	____________________
7. Moving cattle across the road	☐	☐	____________________
8. Produce sales	☐	☐	____________________
Other (please specify) ______________	☐	☐	____________________
______________	☐	☐	____________________
______________	☐	☐	____________________

INTERVIEW ID NUMBER ____

2. Do you think the addition of OWMC-related traffic would affect your farm operation?

YES ☐ NO ☐ DON'T KNOW ☐

If yes, please list the farming activities that would be affected and indicate how your business might be affected

Activity	How Affected

APPENDIX E

LISTING OF LAND USE FEATURES FOR FIGURE 6.3 - LAND USE

APPENDIX E

LISTING OF LAND USE FEATURES FOR FIGURE 6.3 - LAND USE

This appendix identifies the land use features shown on the map (Figure 6.3) contained in the pocket at the back of the report. The various features are identified by number and name below; the number corresponds to the exact location of the feature in Figure 6.3

COMMUNITY AND RECREATION FEATURES

1. Hitchcock Cemetery
2. St. Anns Cemetery
3. St. Anns Community Church
4. Lane Cemetery
5. Silverdale United Church
6. Silverdale Community Centre
7. Silverdale Gun Club
8. Gainsborough Central Elementary School and West Lincoln Co-Op Nursery School
9. Bismarck United Church and Cemetery
10. Gainsborough Conservation Area
11. Gainsborough Centennial Hall
12. Boyle Brethren in Christ Church
13. Bethel Community Church
14. Dufferin Masonic Lodge
15. Wellandport Branch of the West Lincoln Public Library
16. Emmanuel United Church
17. Oddfellows Temple
18. Wellandport Post Office (also considered a business by Morehouse Economic Planning Consultants)
19. Wellandport Community Centre and Park
20. Niagara Regional Sportsmens Gun Club
21. Riverview Golf and Country Club

COMMERCIAL

A. Agribusiness

22. Smithville Quail and Game Farm
23. Silverdale Feed Mill
24. Comfort and Tylee (considered an industrial use by Morehouse Economic Planning Consultants)
25. Peninsula Farm Supply Limited
26. Ross Allen (custom work)
27. Douma Farm Supply
28. Peninsula Grain Elevators Limited and Container Service Ltd.

Appendix E (continued)

29. Flikkema Aviaries
30. Lincoln Meat Market
31. Wellandport Farm Supply and Home Hardware
32. Robbins Feed and Fuel Limited
33. Horse Farm and Arena
34. Harvey and Carol Pot (custom work)

B. Other Businesses

35. Meyer Auto Wrecker
36. John's Auto Body
37. D.G. Baker (income tax and general contractor)
38. Korney's Coffee Shop
39. Vos Builders
40. St. Ann's Snack and Gas Bar
41. Babcock B.R. Ltd. Garage
42. Pat's Auto Service
43. Meisel Auto Scrap
44. Bismarck Variety
45. Ray's Lumber
46. Bismarck Garage
47. A. & B. Service Station
48. Ox-bow Restaurant
49. Silverdale Variety (vacant)
50. Region Car and Truck
51. McIntosh Cycle
52. Davison Pools
53. J. Peters Auto Machine Shop
54. Lorries Hair Styling
55. Beavercreek Construction
56. Wellandport General Store
57. R. McCollum Transport
58. Hoekstra Construction
59. Wellandport Auto and Truck Services
60. John Schilstra Insurance
61. Byrd's Furniture Stripping
62. Vanderheide Auction Services
63. J.F. Auto Performance
64. B. Reaman Septic Tank Service
65. Trailer Park
66. Vanderlee Truck Service (vacant)
67. Dick DeVries Plumbing and Heating
68. The Spare Room (vacant)
69. Pioneer Products
70. Regional Truck and Equipment

Appendix E (continued)

71. Robbins Gas Bar
72. Ernie's Garage
73. L. & J. General Repairs and Used Cars
74. Peninsula Auto Repairs
75. Bradshaw Realty

INDUSTRIAL

76. Clark Pallet Industries
77. Jayway Enterprises (welding)
78. Oak Ridge Woodworking
79. Robertson's Enterprises

Sources:
Community and Recreation Features were provided by the Institute of Environmental Research.

Businesses and Industries were provided by Morehouse Economic Planning Consultants, and OWMC.

Agricultural Land Uses, barns and agribusinesses were mapped by Ecologistics Limited in the summer of 1986.

APPENDIX F

SENSITIVITY ANALYSIS OF NUISANCE IMPACTS YEAR 10 - 300,000 TONNES/ANNUM TYPICAL OPERATION

SENSITIVITY ANALYSIS OF NUISANCE IMPACTS
300,000 TONNES/ANNUM TYPICAL OPERATION

Disruption of the day-to-day activities of residents near the site was assessed in Chapter 9 on the basis of 150,000 tonnes/annum typical operation. In this sensitivity analysis, the implications of a 300,000 tonnes/annum typical operation scenario are assessed for each of the nuisance impacts discussed in Chapter 9: noise, visual intrusion, night lighting, dust, odour and access route impacts.

NOISE

Plant Noise Impacts

At the 300,000 t/a level of operation (year 10) one residence south of the site (location number 49) will experience noise impacts at night. The change in sound levels will represent a moderate degree of impact, as an increase of approximately 7 dBA is anticipated (S.S. Wilson & Associates, 1987).

Landfill Noise Impacts

The increased waste volumes processed in the 300,000 tonnes/annum scenario will result in additional residences being affected by increased noise levels over ambient levels and MOE criteria at both the exposed building face and outdoor living area[1] (S.S. Wilson and Associates 1987). Table 1 shows landfill noise at the exposed building face by residence location; Table 2 shows landfill noise at the outdoor living area by residence location. Table 3 shows landfill noise impacts at exposed building face by degree of impact and number of quadrants causing impact; Table 4 does the same for noise at the outdoor living area.

---

[1] Noise level impact is calculated for the residence facade and for the outdoor living area. MOE defines the latter as a backyard location, sheltered from noise, for family use in good weather (barbeques, outdoor parties etc.). The minimum outdoor living area should be approximately 60 m^2 and readily accessible from the house (S.S. Wilson and Associates 1987).

TABLE 1
LANDFILL NOISE IMPACT AT EXPOSED BUILDING FACE BY RESIDENCE LOCATION
(300,000 TONNES/ANNUM)[1]

Residence Location Number	Existing Ambient Level (dBA)	Excess Over Ambient[2,3]				MOE Reference Criteria (dBA)[4]	Excess Over Criteria[2,3]			
		NW	NE	SE	SW		NW	NE	SE	SW
18	56	H	-	-	-	56	H	-	-	-
19	55	M	-	-	-	55	M	-	-	-
20	58	M	M	-	-	58	M	M	-	-
21	58	M	H	-	-	58	M	H	-	-
29	46	-	L	-	-	55	-	-	-	-
33	55	-	M	-	-	55	-	M	-	-
48	43	L	-	M	H	55	-	-	-	M
49	49	-	-	H	M	55	-	-	H	L
50	40	M	M	H	H	55	-	-	-	-
51	47	-	-	H	L	55	-	-	-	-
52	40	L	M	H	M	55	-	-	-	-
53	44	-	-	M	-	55	-	-	-	-
57	41	-	-	H	-	55	-	-	-	-
75	58	-	M	-	-	58	-	M	-	-
90	43	-	-	-	M	55	-	-	-	-

Source: S.S. Wilson and Associates. Site Assessment, Phase 4B: Noise.1987

Notes:

1. Noise impact from landfill operations without any stockpiling of excavated clay for 300,000 tonnes/annum typical operation.
2. The Landfill noise impacts were assessed as follows:
   L (low) = 4-5 dBA increase
   M (moderate) = 6-10 dBA increase
   H (high) = 11 or more dBA increase
   Source: S.S. Wilson and Associates, Site Assessment, Phase 4B: Noise. 1987
3. NW, NE, SE and SW represent the four landfill quadrants: northwest (NW), northeast (NE), southeast (SE) and southwest (SW).
4. MOE's reference criteria are 55 dBA or the existing ambient level, whichever is the highest.

TABLE 2
LANDFILL NOISE IMPACT AT OUTDOOR LIVING AREA BY RESIDENCE LOCATION
(300,000 TONNES/ANNUM)[1]

Location Number	Residence Ambient Level (dBA)	Existing Excess Over Ambient[2,3]				Reference Criteria (dBA)[4]	MOE Excess Over Criteria[2,3]			
		NW	NE	SE	SW		NW	NE	SE	SW
6	40	M	-	-	-	55	-	-	-	-
8	45	L	-	-	-	55	-	-	-	-
9	45	L	-	-	-	55	-	-	-	-
10	48	L	-	-	-	55	-	-	-	-
11	48	L	-	-	-	55	-	-	-	-
12	46	M	-	-	-	55	-	-	-	-
13	48	M	-	-	-	55	-	-	-	-
14	48	M	-	-	-	55	-	-	-	-
15	48	M	-	-	-	55	-	-	-	-
16	48	M	-	-	-	55	-	-	-	-
17	46	M	-	-	-	55	-	-	-	-
18	46	H	-	-	-	55	M	-	-	-
19	45	H	M	-	-	55	M	-	-	-
20	48	M	M	-	-	55	-	-	-	-
21	48	M	H	-	-	55	-	M	-	-
22	40	L	-	-	-	55	-	-	-	-
26	40	L	M	-	-	55	-	-	-	-
27	40	M	M	-	-	55	-	-	-	-
28	40	-	L	-	-	55	-	-	-	-
29	40	M	M	-	-	55	-	-	-	-
30	40	-	L	-	-	55	-	-	-	-
33	45	M	H	-	-	55	-	M	-	-
34	48	-	M	-	-	55	-	-	-	-
35	46	-	M	-	-	55	-	-	-	-
36	48	-	L	-	-	55	-	-	-	-
39	46	-	L	-	-	55	-	-	-	-
48	40	M	L	H	H	55	-	-	-	M
49	40	M	M	H	H	55	-	-	H	-
50	40	L	M	H	H	55	-	-	-	-
51	40	-	-	H	H	55	-	-	-	-
52	40	L	M	H	M	55	-	-	-	-
53	40	-	-	M	L	55	-	-	-	-
56	40	-	-	M	L	55	-	-	-	-
57	40	-	-	H	H	55	-	-	-	-
58	40	-	-	M	M	55	-	-	-	-
59	40	-	-	L	M	55	-	-	-	-
60	40	-	-	L	-	55	-	-	-	-
75	48	M	H	-	-	55	-	M	-	-
90	40	L	-	-	M	55	-	-	-	-

Source: S.S. Wilson and Associates. Site Assessment, Phase 4B: Noise.1987

Notes:

1. Noise impact from landfill operations without any stockpiling of excavated clay for 300,000 tonnes/annum typical operation.
2. The Landfill noise impacts were assessed as follows:
   L (low) = 4-5 dBA increase
   M (moderate) = 6-10 dBA increase
   H (high) = 11 or more dBA increase
   Source: S.S. Wilson and Associates, Site Assessment, Phase 4B: Noise. 1987
3. NW, NE, SE and SW represent the four landfill quadrants: northwest (NW), northeast (NE), southeast (SE) and southwest (SW).
4. MOE's reference criteria are 55 dBA or the existing ambient level, whichever is the highest.

TABLE 3 LANDFILL NOISE IMPACTS AT EXPOSED BUILDING FACE BY DEGREE OF IMPACT AND NUMBER OF QUADRANTS CAUSING IMPACT (300,000 TONNES/ANNUM)

Degree of Impact[1] by Number of Quadrants Causing Impact[2]	NOISE LEVELS ABOVE AMBIENT				NOISE LEVELS ABOVE CRITERIA			
	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]
LOW								
One Quadrant	1	4	1	1	-	-	-	-
Two Quadrants	-	-	-	-	-	-	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Low Impact	1	4	1	1	-	-	-	-
MODERATE								
One Quadrant	5	18	2	4	4	13	1	1
Two Quadrants	1	5	1	3	1	5	1	3
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Moderate Impact	6	23	3	7	5	18	2	4
HIGH								
One Quadrant	2	9	2	5	1	4	1	3
Two Quadrants	3	10	1	2	2	7	-	-
Three Quadrants	1	4	-	-	-	-	-	-
Four Quadrants	2	11	1	3	-	-	-	-
Total High Impact	8	34	4	10	3	11	1	3
Total, All Degrees of Impact	15	61	8 (11)[5]	18 (25)[5]	8	29	3 (5)[6]	7 (11)[6]

Sources: S.S. Wilson and Associates, Site Assessment, Phase 4B: Noise, 1987; IER, Phase 4B, Resident Interviews, 1986; IER Phase 4A Resident Survey , 1984

Notes:

1. Degree of impact was assigned according to the highest occurring impact for any location. No impact = noise level increase of 1 to 3 dBA; low impact = 4-5 dBA; moderate impact = 6-10 dBA; high impact = 11 or more dBA increase.
2. Each quadrant has an approximate lifetime of at least 5 years; thus the number of quadrants causing an effect indicates the number of years over which impact will occur. It must be remembered that the highest degree of impact may not necessarily occur over all impact periods.
3. Includes residents participating in resident interviews and an estimate of the number of residents in all other dwellings using an average household size of 3.6 (Gainsborough Township, 1981 Census).
4. Only for residents participating in the resident survey; includes pre-schoolers (0-4 years of age), retirees, farmers, housewives and all others who work at home and could be expected to be on their property during the daytime. Thus, the number of sensitive residents reported in this table may be somewhat conservative.
5. Assuming that the characteristics of the residents not interviewed/surveyed are the same as those reported here, the number of sensitive households/residents impacted by noise levels above ambient could increase by a factor of 1.4. These extrapolated values are shown in parentheses.
6. Assuming that the characteristics of residents not interviewed/surveyed are the same as those reported here, the sensitive households/residents impacted by noise levels above criteria could increase by a factor of 1.6 These extrapolated values are shown in parentheses.

TABLE 4 LANDFILL NOISE IMPACTS AT OUTDOOR LIVING AREA BY DEGREE OF IMPACT AND NUMBER OF QUADRANTS CAUSING IMPACT (300,000 TONNES/ANNUM)

Degree of Impact[1] by Number of Quadrants Causing Impact[2]	NOISE LEVELS ABOVE AMBIENT				NOISE LEVELS ABOVE CRITERIA			
	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]	Number of Households	Number of Residents[3]	Number of Households With Residents Spending Most of Their Time on Their Property[4]	Number of Residents Spending Most of Their Time on Their Property[4]
LOW								
One Quadrant	10	45	6	14	-	-	-	-
Two Quadrants	-	-	-	-	-	-	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Low Impact	10	45	6	14	-	-	-	-
MODERATE								
One Quadrant	9	32	6	11	6	20	2	4
Two Quadrants	9	33	5	11	-	-	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	-	-	-	-	-	-	-	-
Total Moderate Impact	18	65	11	22	6	20	2	4
HIGH								
One Quadrant	1	4	1	3	1	4	-	-
Two Quadrants	6	21	3	5	-	-	-	-
Three Quadrants	-	-	-	-	-	-	-	-
Four Quadrants	4	18	1	3	-	-	-	-
Total High Impact	11	43	5	11	1	4	-	-
Total, All Degrees of Impact	39	154	22 (30)[5]	47 (66)[5]	7	24	2 (4)[6]	4 (7)[6]

Sources: S.S. Wilson and Associates, Site Assessment, Phase 4B: Noise, 1987; IER, Phase 4B, Resident Interviews, 1986; IER Phase 4A Resident Survey, 1984

Notes:

1. Degree of impact was assigned according to the highest occurring impact for any location. No impact = noise level increase of 1 to 3 dBA; low impact = 4-5 dBA; moderate impact = 6-10 dBA; high impact = 11 or more dBA increase.
2. Each quadrant has an approximate lifetime of at least 5 years; thus the number of quadrants causing an effect indicates the number of years over which impact will occur. It must be remembered that the highest degree of impact may not necessarily occur over all impact periods.
3. Includes residents participating in resident interviews and an estimate of the number of residents in all other dwellings using an average household size of 3.6 (Gainsborough Township, 1981 Census).
4. Only for residents participating in the resident survey; includes pre-schoolers (0-4 years of age), retirees, farmers, housewives and all others who work at home and could be expected to be on their property during the daytime. Thus, the number of sensitive residents reported in this table may be somewhat conservative.
5. Assuming that the characteristics of the residents not interviewed/surveyed are the same as those reported here, the number of sensitive households/residents impacted by noise levels above ambient could increase by a factor of 1.4. These extrapolated values are shown in parentheses.
6. Assuming the characteristics of residents not interviewed/surveyed are the same as those reported here, the number of sensitive households/residents impacted by noise levels above criteria could increase by a factor of 1.8. These extrapolated values are shown in parentheses.

The noise consultant estimated post-mitigation landfill noise impacts at both the exposed building face and outdoor living areas (S.S. Wilson and Associates 1987). Assuming that central air conditioning and upgrading of windows is effective in all cases, it was determined that landfill noise impacts over MOE criteria ('closed window conditions') at the exposed building face would be eliminated. Although these measures would not change the outdoor living area noise levels, the indoor noise rating would be 'no impact'.

The level of attenuation achieved by berms and barriers at outdoor living areas will be approximately 5 dBA if a 3m barrier is constructed. Outdoor living area impact ratings would change as follows: in terms of MOE criteria, the noise level increase at one residence (#49) would change from 11 dBA (high impact) to 6 dBA (moderate impact) for at least five years. All others would be rated as minimal or no impact. With respect to ambient noise levels in the outdoor lving area, 25 residences would change from some degree of impact to none at all. Four would experience a low degree of impact for at least 5 years; another 3, moderate impact for at least 5 years; 2 households would experience a high degree of impact for at least 5 years. Two residences would experience moderate impact for at least 10 years, and 4 households would experience high impact for at least 10 years (S.S. Wilson and Associates 1987).

It is anticipated that no residences will experience indoor noise impact with respect to MOE criteria. As such, only outdoor activites on properties impacted by noise should experience disruption. In terms of MOE criteria, only one residence will experience moderate impacts in the outdoor living area; however, a number of others (15) will experience perceptible increases in noise above the ambient levels for periods of at least five or ten years. During this time, outdoor activities may be disrupted during landfilling operations, moreso during the summer when residents spend more time outdoors (gardening, barbeques, relaxation).

VISUAL INTRUSION

Increasing the volume of waste processed at the OWMC facility would require construction of a number of additional buildings on the site (EDA Collaborative Inc. 1987). It is thought that the configuration of these structures would be quite similar in size and scale to the facility under 150,000 tonnes/annum conditions. A second flue would be opened within the already existing stack of the rotary kiln. The visual consultant concluded that under the 300,000 tonnes/annum scenario, visual impact would not be increased substantially (EDA Collaborative Inc. 1987). Similarly, disruption of the day-to-day activities of local residents should not increase substantially from that reported in Chapter 9, Section 9.5.2.

NIGHT LIGHTING

As night lighting requirements should not be affected by the increased volumes of waste processed under the 300,000 tonnes/annum scenario, disruption of day-to-day activities of residents would remain unchanged from that described in Chapter 9, Section 9.5.3.

DUST

Preliminary estimates indicate that the dust impact zone would expand to cover the area within 550m of the site boundary at 300,000 tonnes/annum. This is an increase of 90m from the 460m zone determined at 150,000 tonnes/annum.[1] Four additional residences (numbers 12, 13, 57 and 35) would be within the dust impact zone, for a total of 19 residences.

ODOUR

Under operating conditions of 150,000 tonnes/annum, it was anticipated that occasional off-site odours might be detected under the most adverse conditions (Ontario Research Foundation 1987). Odours could result from incinerator emissions, spills or fumes generated by landfill equipment and vehicles on-site. It is assumed that with a doubling of the amount of waste treated, odour occurences could be expected with greater frequency. Thus, resident's day-to-day activities, particularly those taking place outdoors, could be expected to be disrupted more often.

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[1] Ontario Research Foundation. Site Assessment, Phase 4B: Atmospheric Conditions. 1987. Prepared for the Ontario Waste Management Corporation. Toronto, Ontario.

ACCESS ROUTE IMPACTS

TRAFFIC OWMC-related traffic would double under the 300,000 tonnes/annum scenario. The higher levels of waste processing would result in 328 (168)[1] two-way truck movements and 482 (364) two-way employee vehicle movements each day (Ontario Waste Management Corporation 1987). The increase in total daily traffic along Regional Road 24 will range from 0.8% (0.5%) in the Vineland area to 3.7% (2.2%) in the vicinity of the Highway 20 intersection; for truck traffic the values are 3.7% (2.5%) and 16.8% (10.0%) respectively. OWMC-related traffic will represent a 12.8% (10.2%) increase in total traffic and a 55.6% (29.0%) increase in truck traffic along Highway 20. OWMC operations at 300,000 tonnes/annum would add 810 (532) two-way work day trips to Schram Road, including 328 (168) trucks. This represents an increase of 406% (255%) in total traffic along Schram Road (Ontario Waste Management Corporation 1987). The significance of the traffic impacts described in Chapter 9, Section 9.6 is not expected to change as a result of the increased traffic associated with the 300,000 tonnes/annum level of operation; however residents along the access route may experience a perception of greater impact.

NOISE Increases in noise levels at the 300,000 tonnes/annum level of operation are expected to be less than 2 dBA (and thus imperceptible) along the entire access route, with the exception of Schram Road between Highway 20 and the site entrance (S.S. Wilson and Associates 1987). The increase in noise levels resulting from OWMC-related truck traffic on this section of Schram Road will be 17 dBA; however, there are no residences in that area. Two residences located on the south side of Highway 20 near Silverdale Road will be impacted by noise at the intersection to a marginal or low degree (i.e., less than 5 dBA increase).[2] The disruption impacts reported in Chapter 9, Section 9.6, for the 150,000 tonnes/annum level of operation are not expected to be very different at 300,000 tonnes/annum.

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[1] Values for 150,000 tonnes/annum typical operation are included in parentheses for ease of comparison, e.g., 328 (168).

[2] Residence location numbers 33 and 75 (see Figure 9.1); residence number 32 (vacant) would also experience a low degree of impact (less than 4dBA) (S.S. Wilson and Associates, 1987).

DUST Because of the increases in truck and other vehicular traffic described above with respect to the 300,000 tonnes/annum scenario, some increase in the dust impacts experienced along the access route can be expected. However, they should remain limited to the immediate vicinity of the roadway with unpaved shoulders and be of a periodic and infrequent nature.

VIBRATION At this time, the Ontario Ministry of the Environment does not have guidelines covering ground borne vibration from truck pass-by. It has been determined that, because of the relatively low increase in truck traffic due to OWMC and the low sound levels reaching residences from truck pass-by, no increase in vibration impact is predicted over what may exist at the present time (S.S. Wilson and Associates, 1987). However, residents may percieve an increased vibration impact as a result of the higher traffic levels.

ODOUR At 150,000 tonnes/annum typical operation, access route odour impacts are not anticipated. At 300,000 tonnes/annum typical operation, truck traffic along Regional Road 24 could increase up to 17%; along Highway 20 the increase would be 56%; and along Schram Road truck traffic would increase 683% (Ontario Waste Management Corporation 1987). This may result in some odour impact along the access route in the event of a spill.

EVACUATION NUISANCE Under the 300,000 tonnes/annum scenario, spill frequencies double. Thus, the estimated frequency of a roadway spill that would have the potential to cause adverse effects on the exposed off-site population (implying the need for evacuation) is once every 66 years (Environ Corp. 1988).

APPENDIX G

TYPICAL SOUND LEVELS

TYPICAL SOUND LEVELS

SOURCE	dBA
Threshold of pain	140
Jet engine at 70m	125
Rivetting machine at 30m	90
Diesel truck passby at 15m	85-93
Lawn mower at 3m	85-90
Farm tractor at 3m	85-90
Freight train passby at 30m	73
Vacuum cleaner at 3m	70
Conversational speech	55-65
General offices	55-65
Library	40-45
Soft whisper at 3m	35-40
Threshold of hearing	0

Source: S.S. Wilson and Associates, Site Assessment. Phase 4B: Noise, 1987.

APPENDIX H

OUT-MIGRATION SCENARIO TABLES

TABLE 1
OUT-MIGRATING HOUSEHOLDS/RESIDENTS

	Scenario One	Scenario Two	Scenario Three
Number of Households[1]	15	31.5	329.5
Number of Residents[2]	52.8	125	1161.1

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 102; Phase 4B On-Site Resident Interviews, Question 102; Phase 4A Resident Surveys, Questions 18 and 19.

Notes:

1. Includes an estimate of the number of households not interviewed that would move, based on the Phase 4B interview results.
2. Includes interviewed households, and an estimate of the population of households not interviewed based on an average household size of 3.6.

TABLE 2
LENGTH OF RESIDENCE (CURRENT ADDRESS) OF OUT-MIGRATING HOUSEHOLDS[1]

Number of Years	Scenario One	Scenario Two	Scenario Three
Less than one	-	-	3 (3.6%)
1-2	4 (28.6%)	4 (20.0%)	14 (16.7%)
3-5	2 (14.3%)	2 (10.0%)	12 (14.3%)
6-10	1 (7.1%)	3 (15.0%)	17 (20.2%)
11-15	1 (7.1%)	3 (15.0%)	12 (14.3%)
16-20	-	1 (5.0%)	3 (3.6%)
More than 20	5 (35.7%)	6 (30.0%)	20 (3.8%)
Always lived here	1 (7.1%)	1 (5.0%)	3 (3.6%)
Total	14	20	84

Sources: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 1; Phase 4B On-Site Resident Interviews, Question 1; Phase 4A Resident Surveys, Question 1.

Notes:

1. Includes interviewed households only; percentage calculated relative to the total number of respondents to the question.

TABLE 3
LENGTH OF RESIDENCE (WEST LINCOLN) OF OUT-MIGRATING HOUSEHOLDS[1]

Number of Years	Scenario One	Scenario Two	Scenario Three
Less than one	-	-	1 (1.2%)
1-2	2 (15.4%)	2 (10.5%)	8 (9.6%)
3-5	1 (7.1%)	1 (5.3%)	8 (9.6%)
6-10	2 (15.4%)	3 (15.8%)	9 (10.8%)
11-15	-	1 (5.3%)	10 (12.0%)
16-20	-	1 (5.3%)	4 (4.8%)
More than 20	6 (46.2%)	8 (42.1%)	29 (34.9%)
Always lived in West Lincoln	2 (15.4%)	3 (15.8%)	14 (16.9%)
Total	13	19	83

Sources: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 2; Phase 4B On-Site Resident Interviews, Question 2; Phase 4A Resident Surveys, Question 3.

Notes:

1. Includes interviewed households only; percentage calculated relative to the total number of respondents to the question.

TABLE 4
TENURE OF OUT-MIGRATING HOUSEHOLDS[1]

Tenure	Scenario One	Scenario Two	Scenario Three
Own	11 (91.7%)	16 (88.9%)	70 (83.3%)
Rent	1 (8.3%)	2 (11.1%)	14 (16.7%)
Total	12	18	84

Sources: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 4; Phase 4B On-Site Resident Interviews, Question 4; Phase 4A Resident Surveys, Question 8.

Notes:

1. Includes interviewed households only; percentage calculated relative to the total number of respondents to the question.

TABLE 5
PROPERTY OWNED BY ANCESTORS OF OUT-MIGRANTS[1]

Property Owned by Ancestors	Scenario One	Scenario Two	Scenario Three
Yes	3 (23.1%)	7 (36.8%)	24 (28.6%)
No	10 (76.9%)	12 (63.2%)	60 (71.4%)
Total	13	19	84
If Yes, How Long?			
0-10 years	-	-	2
11-20 years	-	-	2
21-30 years	1	4	10
31-40 years	-	-	1
41-50 years	-	-	2
51-60 years	-	1	-
61-70 years	-	-	1
71-80 years	-	-	-
81-90 years	-	-	-
91-100 years	-	-	2
101-150 years	1	1	1
151-200 years	-	-	1
Total	2	6	22

Sources: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 5; Phase 4B On-Site Resident Interviews, Question 5; Phase 4A Resident Survey, Question 2.

Notes:

1. Includes interviewed households only; percentage calculated relative to the total number of respondents to the question.

TABLE 6
OUT-MIGRANTS WITH
ANCESTORS ELSEWHERE IN WEST LINCOLN[1]

Ancestors Elsewhere in West Lincoln	Scenario One	Scenario Two	Scenario Three
Yes	4 (33.3%)	7 (38.9%)	29 (35.4%)
No	8 (66.7%)	11 (61.1%)	53 (64.6%)
Total	12	18	82
If Yes, How Long?			
0-20 years	-	-	4
21-40 years	-	1	5
41-60 years	1	1	1
61-80 years	-	-	-
81-100 years	-	-	4
100-150 years	1	2	5
150-200 years	1	1	2
Total	3	5	21
Number of Generations			
One	1	1	2
Two	-	-	2
Three	-	1	4
Four	1	1	4
Five	-	-	1
Six	-	-	1
Seven	-	-	-
Eight	-	-	1
Nine	-	-	-
Total	2	3	15

Sources: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 6; Phase 4B On-Site Resident Interviews, Question 6; Phase 4A Resident Surveys, Question 4a.

Notes:

1. Includes interviewed households only; percentage calculated relative to the total number of respondents to the question. Some respondents provided answers for both '# of years' and '# of generations'.

TABLE 7
COMMUNITY SATISFACTION OF OUT-MIGRANTS[1]

Satisfaction	Scenario One	Scenario Two	Scenario Three
Very dissatisfied 1	-	-	-
2	-	-	-
3	1 (12.5%)	3 (14.3%)	3 (3.8%)
4	-	-	8 (10.1%)
5 Very satisfied	7 (87.5%)	18 (85.7%)	68 (86.1%)
Total	8	21	79

Sources: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 57; Phase 4B On-Site Resident Interviews, Question 57.

Notes:

1. Includes interviewed households only; percentage calculated relative to the total number of respondents to the question.

TABLE 8
REASONS/PROBLEMS MAKING IT DIFFICULT TO MOVE FOR OUT-MIGRANTS[1]

Would There Be A Problem?	Scenario One	Scenario Two	Scenario Three
Yes	6 (100%)	12 (92.3%)	69 (88.5%)
No	-	-	6 (7.7%)
Don't Know	-	1 (7.7%)	3 (3.8%)
Total	6	13	78
Response[2]			
No place to go	-	-	2 (2.9%)
Too old	-	-	3 (4.3%)
Health Reasons	-	-	2 (2.9%)
Reduction in property value	3 (50.0%)	5 (41.7%)	28 (40.6%)
Attached to home/area	4 (66.7%)	6 (50.0%)	21 (30.4%)
Family in area	1 (16.7%)	2 (16.7%)	15 (21.7%)
Employment obligations	1 (16.7%)	1 (8.3%)	4 (5.8%)
Business difficult to transfer	-	-	6 (8.7%)
Financial reasons	1 (16.7%)	2 (16.7%)	12 (17.4%)
Lose contact with friends in area	-	-	5 (7.2%)
Nuisance	-	1 (8.3%)	4 (5.8%)
Can't sell/no buyer	2 (33.3%)	4 (33.3%)	17 (24.6%)
Location of site	-	1 (8.3%)	1 (1.4%)

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. 67; Phase 4B On-Site Resident Interviews, Question 61.

1. Includes interviewed households only.
2. Includes those who answered 'yes' only; some respondents provided more than one answer.

TABLE 9

NUMBER OF 'CLOSEST FRIENDS' IN WEST LINCOLN: OUT-MIGRANTS[1]

Number	Scenario One	Scenario Two	Scenario Three
One	-	-	9 (11.5%)
Two	3 (30.0%)	3 (18.8%)	15 (19.2%)
Three	5 (50.0%)	9 (56.3%)	32 (41.0%)
None	2 (20.0%)	4 (25.0%)	22 (28.2%)
Total	10	16	78

Source: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 68; Phase 4B On-Site Resident Interviews Question 68; Phase 4A Resident Surveys, Question 7.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents answering the question.

TABLE 10
OUT-MIGRANTS HAVING RELATIVES IN WEST LINCOLN[1]

Relatives in West Lincoln	Scenario One	Scenario Two	Scenario Three
Yes	8 (72.7%)	11 (64.7%)	52 (65.8%)
No	3 (27.3%)	6 (35.3%)	27 (34.2%)
Total	11	17	79

Source: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 69; Phase 4B On-Site Resident Interviews, Question 69; Phase 4A Resident Surveys, Question 6.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents answering the question.

TABLE 11
ENTERTAINING NEIGHBOURS: OUT-MIGRANTS[1]

How Often	Scenario One	Scenario Two	Scenario Three
Never	1 (11.1%)	2 (3.3%)	8 (10.7%)
Once a year	-	-	3 (4.0%)
Four times a year	1 (11.1%)	1 (6.7%)	10 (13.3%)
Monthly	1 (11.1%)	2 (3.3%)	9 (12.0%)
Weekly	4 (44.4%)	5 (33.3%)	26 (34.7%)
Daily	2 (22.2%)	5 (33.3%)	19 (25.3%)
Total	9	15	75

Source: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 70; Phase 4B On-Site Resident Interviews, Question 70.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents answering the question.

TABLE 12
OUT-MIGRANTS HELPING NEIGHBOURS (NON-FARM HELP)[1]

How Often	Scenario One	Scenario Two	Scenario Three
Never	1 (11.1%)	1 (6.7%)	9 (12.0%)
Once a year	1 (11.1%)	1 (6.7%)	3 (4.0%)
Four times a year	-	-	7 (9.3%)
Monthly	1 (11.1%)	1 (6.7%)	14 (18.7%)
Weekly	4 (44.4%)	7 (46.7%)	18 (24.0%)
Daily	2 (22.2%)	5 (33.3%)	24 (32.0%)
As requested	-	-	-
Total	9	15	75

Source: Phase 4B Resident Interview Cross-tabulation, Question 66 vs. Question 71a; Phase 4B On-Site Resident Interviews, Question 71a.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents answering the question.

TABLE 13
OUT-MIGRANTS HELPING NEIGHBOURS (FARM HELP)[1]

How Often	Scenario One	Scenario Two	Scenario Three
Never	1 (14.3%)	2 (18.2%)	15 (27.8%)
Once a year	1 (14.3%)	1 (9.1%)	3 (5.5%)
Four times a year	-	-	8 (14.8%)
Monthly	4 (57.1%)	5 (45.5%)	12 (22.2%)
Weekly	1 (14.3%)	2 (18.2%)	9 (16.7%)
Daily	-	1 (9.1%)	6 (11.1%)
As required	-	-	1 (1.8%)
Total	7	11	54

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 71b; Phase 4B On-Site Interviews, Question 71b.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents answering the question.

TABLE 14
OUT-MIGRANTS WITH CHILDREN ATTENDING SCHOOL[1]

Children Attending School	Scenario One	Scenario Two	Scenario Three
Yes	3 (37.5%)	7 (50.0%)	31 (40.2%)
No	5 (62.5%)	7 (50.0%)	46 (59.7%)
Total	8	14	77

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 73; Phase 4B On-Site Resident Interviews, Question 73.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents answering the question.

TABLE 15
COMMUNITY GROUP MEMBERSHIP OF OUT-MIGRANTS[1]

Membership	Scenario One	Scenario Two	Scenario Three
Yes	5 (41.7%)	7 (41.2%)	33 (41.8%)
No	7 (58.3%)	10 (58.8%)	46 (58.2%)
Total	12	17	79
If Yes, Group[2]			
Agriculture Group	1 (20.0%)	1 (4.3%)	5 (15.2%)
Church Group[3]	9 (180.0%)[3]	10 (142.9%)[3]	29 (87.9%)
Service Club	-	-	6 (18.2%)
Sports and Recreation Club	-	1 (14.3%)	23 (69.7%)
Cultural Group	-	-	1 (3.0%)
Social Club	1 (20.0%)	1 (14.3%)	9 (27.3%)
Other Leisure Club	-	-	1 (3.0%)
Political Organization	-	-	-
Ratepayers/Community Group	-	-	-
Naturalist Environmental Group	-	-	-
School Group	-	-	2 (6.1%)
Unstructured Volunteer	-	-	2 (6.1%)
Charitable Organization	-	-	1 (3.0%)
Other	-	-	-

Sources: Phase 4A Resident Survey, Question 15; Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 72; Phase 4B On-Site Resident Interviews, Question 72.

Notes:

1. Includes interviewed households only.
2. Percentages calculated relative to the number of respondents having membership in community group.
3. Some respondents reported membership in more than one church group; thus the percentages may add up to more than 100%.

TABLE 16
OUT-MIGRANTS ON COMMUNITY GROUP EXECUTIVE[1,2]

Group	Scenario One	Scenario Two	Scenario Three
Agricultural Group	1 (20.0%)	1 (14.3%)	2 (6.1%)
Church Group	2 (40.0%)	2 (8.6%)	13 (39.4%)
Service Group	-	-	-
Sports and Recreation Club	-	-	6 (18.2%)
Cultural Group	-	-	-
Social Club	1 (20.0%)	1 (14.3%)	2 (6.1%)
Other Leisure Club	-	-	-
Political Organization	-	-	-
Ratepayer/Community Group	-	-	-
Naturalist/Environmental Group	-	-	-
School Group	-	-	2 (6.1%)
Charitable Organization	-	-	1 (3.0%)
Other	-	-	-

Sources: Phase 4A Resident Surveys, Question 16; Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 72; Phase 4B On-Site Resident Interviews, Question 72.

Notes:

1. Includes interviewed households only.
2. Percentages calculated relative to the number of respondents having membership in community groups.

TABLE 17
CHURCH ATTENDANCE OF OUT-MIGRANTS[1]

Church Attendance[2]	Scenario One	Scenario Two	Scenario Three
Regularly	7 (63.6%)	9 (52.9%)	35 (44.3%)
Occasionally	-	-	21 (26.6%)
Never	4 (36.4%)	8 (47.1%)	22 (27.8%)
Total	11	17	79
If Yes or Occasionally, Which Church?[3]			
Bismark United	-	-	1 (1.8%)
Silverdale United	-	-	1 (1.8%)
Emmanuel United	-	-	2 (3.6%)
Bethel Community Church	-	-	-
Boyle Brethren in Christ	-	-	1 (1.8%)
St. Ann's Community Church	2 (33.3%)	2 (25.0%)	6 (10.7%)
Smithville Churches	2 (33.3%)	3 (37.5%)	14 (25.0%)
Other Wellandport Churches	1 (16.7%)	1 (12.5%)	8 (14.3%)
Town of Pelham Churches	-	-	5 (8.9%)
Town of Lincoln Churches	-	-	7 (12.5%)
Other Regional Municipality of Niagara Churches	-	7 (12.5%)	7 (12.5%)
Other	1 (16.7%)	1 (12.5%)	4 (7.1%)
Total	6	8	56

Sources: Phase 4A Resident Surveys, Question 15; Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 75; Phase 4B On-Site Interviews, Question 75.

Notes:

1. Includes interviewed households only; percentages calculated relative to number of respondents attending church regularly or occasionally.
2. In Phase 4A Surveys, the question was posed differently; assumed 'regular attendance', if any.
3. Percentages calculated relative to the number of respondents naming the church.

TABLE 18
AGE PROFILE OF OUT-MIGRANTS[1]

Age (Years)	Scenario One	Scenario Two	Scenario Three
0-4	1 (3.0%)	5 (8.5%)	30 (10.8%)
5-9	4 (12.1%)	5 (8.5%)	19 (6.9%)
10-14	2 (6.1%)	5 (8.5%)	15 (5.4%)
15-19	4 (12.1%)	7 (11.9%)	29 (10.5%)
20-24	4 (12.1%)	6 (10.2%)	37 (13.4%)
25-34	1 (3.0%)	8 (13.6%)	45 (16.2%)
35-44	6 (18.2%)	11 (18.6%)	37 (13.4%
45-54	6 (18.2%)	7 (11.9%)	27 (9.7%)
55-64	3 (9.1%)	3 (5.1%)	30 (10.8%)
65 and over	2 (6.1%)	2 (3.4%)	8 (2.9%)
Total	33	59	277

Sources: Phase 4A Resident Survey, Questions 20-22; Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 102; Phase 4B On-Site Resident Interviews, Question 102.

Notes:

1. Includes interviewed households only; percentages calculated relative to total number of people whose ages were reported in this question.

TABLE 19
EDUCATION LEVEL OF OUT-MIGRANTS[1]

Level	Scenario One	Scenario Two	Scenario Three
Some Elementary	-	-	7 (3.8%)
Elementary	3 (16.7%)	7 (24.1%)	21 (11.5%)
Some High School	6 (33.3%)	9 (31.0%)	52 (8.4%)
High School	5 (27.8%)	8 (27.6%)	58 (31.7%)
Some University	-	1 (3.4%)	5 (2.7%)
University	2 (11.1%)	2 (6.9%)	11 (6.0%)
Some Community College	-	-	18 (9.8%)
Community College	2 (11.1%)	2 (6.9%)	11 (6.0%)
Total	18	29	183

Sources: Phase 4A Resident Survey, Question 23; Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 103; Phase 4B On-Site Resident Interviews, Question 103.

Notes:

1. Includes interviewed households only; percentages calculated relative to total number of persons whose education level was reported.

TABLE 20
OCCUPATION OF OUT-MIGRANTS[1]

Occupation	Scenario One	Scenario Two	Scenario Three
Manager/Administrator	1 (3.6%)	2 (5.4%)	9 (4.6%)
Teaching	-	-	3 (1.5%)
Medicine/Health	2 (7.1%)	2 (5.4%)	3 (1.5%)
Social/Religious/Art	1 (3.6%)	1 (2.7%)	5 (2.6%)
Clerical	1 (3.6%)	1 (2.7%)	6 (3.1%)
Sales	1 (3.6%)	1 (2.7%)	7 (3.6%)
Service	-	-	8 (4.1%)
Primary	1 (3.6%)	2 (5.4%)	7 (3.6%)
Processing/Manufacturing	-	-	7 (3.6%)
Machine Repair	1 (3.6%)	1 (2.7%)	11 (5.7%)
Construction	1 (3.6%)	2 (5.4%)	8 (4.1%)
Transportation	1 (3.6%)	3 (8.1%)	8 (4.1%)
Farmer	11 (39.3%)	11 (29.7%)	31 (16.0%)
Student	-	1 (2.7%)	7 (3.6%)
Homemaker	4 (14.3%)	6 (16.2%)	42 (21.6%)
Unemployed	-	1 (2.7%)	4 (2.1%)
Retired	2 (7.1%)	2 (5.4%)	11 (5.7%)
Disabled	-	-	1 (0.5%)
Professional	-	-	2 (1.0%)
Self-employed	-	-	3 (1.5%)
Factory Worker/Labourer	1 (3.6%)	1 (2.7%)	10 (5.2%)
Landscaper	-	-	1 (0.5%)
Other	-	-	-
Total	28	37	194

Sources: Phase 4A Resident Surveys, Question 13; Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 104; Phase 4B On-Site Interviews, Question 104.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of people whose occupation was reported.

TABLE 21
HOUSEHOLD INCOME OF OUT-MIGRANTS[1]

Income	Scenario One	Scenario Two	Scenario Three
Under $10,000	-	-	3 (5.6%)
$10,000-$14,999	-	-	5 (9.3%)
$15,000-$19,999	1 (16.7%)	2 (22.2%)	5 (9.3%)
$20,000-$24,999	1 (16.7%)	2 (22.2%)	5 (9.3%)
$15,000-$29,999	1 (16.7%)	1 (11.1%)	6 (11.1%)
$30,000-$39,999	1 (16.7%)	2 (22.2%)	12 (22.2%)
$40,000-$49,999	1 (16.7%)	1 (11.1%)	2 (3.7%)
$50,000 and over	-	-	9 (6.7%)
Don't Know	1 (16.7%)	1 (11.1%)	7 (13.0%)
Total	6	9	54

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 106; Phase 4B On-Site Interviews, Question 106.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents reporting income.

TABLE 22
DESTINATIONS OF OUT-MIGRANTS[1]

Destination	Scenario One	Scenario Two	Scenario Three
Township of West Lincoln, within study area	-	-	-
Township of West Lincoln, outside study area	-	-	-
Town of Pelham	-	-	2 (4.4%)
Town of Lincoln	-	-	6 (13.3%)
Town of Grimsby	-	-	2 (4.4%)
Regional Municipality of Niagara	3 (75.0%)	3 (60.0%)	7 (15.6%)
Outside Regional Municipality of Niagara	1 (25.0%)	2 (40.0%)	28 (62.2%)

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 66b; Phase 4B On-Site Interviews, Question 60.

Notes:

1. Questions re: destination of movers were not asked in Phase 4A Survey.

TABLE 23
SCHOOL ATTENDANCE OF OUT-MIGRANTS[1,2]

School	Scenario One	Scenario Two	Scenario Three
Gainsborough Elementary	-	3 (25.0%)	16 (30.8%)
College St. Elementary	-	-	-
Smithville District Christian High School	-	-	1 (1.9%)
South Lincoln High School	1 (16.7%)	1 (8.3%)	6 (11.5%)
St. Martins Separate School	-	-	1 (1.9%)
St. Ann's Separate School	-	-	4 (7.7%)
John Calvin School	3 (50.0%)	3 (25.0%)	7 (13.5%)
Wellandport Christian School	-	-	2 (3.8%)
E.L. Crossley School	-	-	-
Beamsville High School	1 (16.7%)	2 (16.7%)	11 (21.2%)
Other	1 (16.7%)	3 (25.0%)	4 (7.7%)
Total	6	12	52

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 74; Phase 4B On-Site Interviews, Question 74.

Notes:
1. Includes interviewed households only; percentages calculated relative to the number of respondents having answered the question.
2. Values represent number of children rather than households.

TABLE 24
IMPACT OF OUT-MIGRATION
ON SCHOOLS OUTSIDE THE STUDY AREA

Decline From Present Enrolment Levels

School	Scenario One	Scenario Two	Scenario Three
South Lincoln High School[1]	0.4%	0.4%	2.2%
John Calvin School[2]	1.2%	1.2%	2.9%
Wellandport Christian School[3]	-	-	0.7%
Beamsville High School[4]	0.1%	0.2%	1.1%

Notes:

1. Present enrolment 272 students; expect a 14% decline over next 5 years. Source: Bob Crawford, Supervisor, Planning and Transportation, Lincoln County Board of Education. March 31, 1987.
2. Present enrolment 241; an 8% increase in enrolment over the next six years is projected. Source: Peter Torenvliet, Headmaster, March 23, 1987.
3. Present enrolment 292 students; project a 7.5% increase for next year. Source: Mr. W. Thies, Principal. March 31, 1987.
4. Present enrolment 975 students; project an 18% decline over the next five years. Source: Bob Crawford, Planning and Transportation, Lincoln County Board of Education. March 31, 1987.

TABLE 25
IMPACTS OF OUT-MIGRATION ON CHURCH ATTENDANCE[1]

Church	Scenario One	Scenario Two	Scenario Three
Bismarck United Church[2]	-	-	4%
Silverdale United[3]	-	-	11.1%
Bethel Community Church[4]	-	-	-
Boyle Brethren in Christ[5]	-	-	3.0%

Notes:

1. When known church attendance has been given as 'number of people' a conversion to number of households was made using an assumption that a church going family = 3 people.
2. Average attendance of 25 families; 51 families are actual members; membership is stable. Source: Agency Contact, October 24, 1986.
3. Average attendance is 28 people; membership is stable. Source: Agency Contact, March 21, 1986.
4. Average attendance about 12-15 people; membership is at a low point. Source: Agency Contact, March 20, 1986.
5. Average attendance is about 100 people; stable membership with recent increase. Source: Agency Contact, April 9, 1986.

TABLE 26
DECLINE IN COMMUNITY GROUP MEMBERSHIP DUE TO OUT-MIGRATION

Membership	Membership: All Respondents	Scenario One	Scenario Two	Scenario Three
Yes	122 (52.1%)	5.7%	8.1%	27.0%
No	112 (47.9%)			
If Yes, Group				
Agricultural Group	21	4.8%	4.8%	23.8%
Church Group	100	9.0%	10.1%	29.0%
Service Club	23	-	-	26.1%
Sports and Recreation Club	62	-	1.6%	37.1%
Cultural Group	7	-	-	14.3%
Social Club	30	3.3%	3.3%	30.0%
Other Leisure Club	4	-	-	25.0%
Political Organization	5	-	-	-
Ratepayer/ Community Group	1	-	-	-
Naturalist/ Environmental Group	6	-	-	-
School Group	5	-	-	40.0%
Unstructured Volunteer	3	-	-	66.7%
Charitable Organization	1	-	-	100.0%
Other	1	-	-	-

TABLE 27
DECLINE IN COMMUNITY GROUP EXECUTIVE DUE TO OUT-MIGRATION

Group	Executive Membership: All Respondents	Scenario One	Scenario Two	Scenario Three
Agricultural Group	6	16.7%	16.7%	33.3%
Church Group	38	5.3%	5.3%	34.2%
Service Club	8	-	-	-
Sports and Recreation Club	15	-	-	40.0%
Cultural Group	2	-	-	-
Social Club	10	10.0%	10.0%	20.0%
Other Leisure Club	2	-	-	-
Political Organization	4	-	17.5%	-
Ratepayer/ Community Group	1	-	-	-
Naturalist/ Environmental Group	3	-	-	-
School Group	5	-	-	40.0%
Charitable Organization	1	-	-	100.0%
Other	1	-	-	-

TABLE 28
IMPACT OF OUT-MIGRATION ON THE COMMUNITY

	Local Community	West Lincoln	Scenario One		Scenario Two		Scenario Three	
			G[3]	WL[4]	G[3]	WL[4]	G[3]	WL[4]
Number of Households	642	2,910[1]	2.3	0.5	4.9	1.1	51.3	11.3
Number of Residents	2270	9918[2]	2.3	0.5	5.5	1.3	51.1	11.7

Sources: 1981 and 1986 Census of Canada; Phase 4A Resident Surveys; Phase 4B Resident Interview Cross-tabulation; Phase 4B On-Site Resident Interviews.

Notes:

1. 1981 Census of Canada (1986 values not yet available)
2. 1986 Census of Canada
3. Decline in Former Gainsborough Township
4. Decline in West Lincoln Township

TABLE 29
POPULATION GROWTH:
NIAGARA REGION AND SELECTED MUNICIPALITIES

	1971		1976		1981		1986
Niagara Region	347,328		365,438		368,288		370,132
5 year growth rate		+5.2%		+0.8%		+0.5%	
West Lincoln	8,396		9,459		9,846		9,918
5 year growth rate		+12.7%		+4.1%		+0.7%	
Lincoln	14,247		14,460		14,196		14,391
5 year growth rate		+1.5%		-1.8%		+1.4%	
Pelham	9,997		10,071		11,104		12,137
5 year growth rate		+0.7%		+10.3%		+9.3%	
Wainfleet	5,486		6,064		6,000		5,955
5 year growth rate		+10.5%		-1.1%		-0.8%	

Sources: Statistics Canada 1971, 1976, 1981, 1986 Census Data.

TABLE 30
ETHNICITY OF OUT-MIGRANTS[1]

Group	Scenario One	Scenario Two	Scenario Three
English	-	1 (7.1%)	11 (11.8%)
Scottish	-	-	4 (4.3%)
Irish	-	-	4 (4.3%)
French	-	-	4 (4.3%)
Dutch	3 (37.5%	4 (28.6%)	21 (22.6%)
Greek	1 (12.5%)	2 (14.3%)	2 (2.2%)
Italian	-	-	2 (2.2%)
German	1 (12.5%)	1 (7.1%)	10 (10.8%)
Scandinavian	-	-	1 (1.1%)
Ukrainian	1 (12.5%)	1 (7.1%)	2 (2.2%)
Polish	-	-	1 (1.1%)
Canadian	2 (25.0%)	5 (35.7%)	30 (32.3%)
Yugoslavian/Czech	-	-	-
Armenian	-	-	1 (1.1%)
Total	8	14	3

Sources: Phase 4B Resident Interview Cross-tabulations, Question 66 vs. Question 105; Phase 4B On-Site Resident Interviews, Question 105.

Notes:

1. Includes interviewed households only; percentages calculated relative to the number of respondents reporting their ethnicity.

TABLE 31
IMPACTS OF OUT-MIGRATION ON ETHNIC COMPOSITION

Group	All Respondents	Scenario One	Scenario Two	Scenario Three
English	47 (17.0%)	-	2.1%	23.4%
Scottish	16 (6.0%)	-	-	25.0%
Irish	18 (6.0%)	-	-	22.2%
French	8 (3.0%)	-	-	50.0%
Dutch	62 (22.0%)	4.8%	6.5%	33.9%
Greek	3 (1.0%)	33.3%	66.6%	66.6%
Italian	5 (2.0%)	-	-	40.0%
German	21 (8.0%)	4.8%	4.8%	47.6%
Ukrainian	5 (2.0%)	20.0%	20.0%	40.0%
Polish	11 (4.0%)	-	-	9.1%
Canadian	75 (27.0%	2.7%	6.7%	40.0%

TABLE 32
IMPACTS ON FARM COMMUNITY

	Local Community	Scenario One	Scenario Two[1]	Scenario Three[1]
Number of farm households	143	8	8	78
Decline Relative to Local Community[2]		4.9%	4.9%	54.5%

Sources: Farm households, study area - Ecologistics Ltd. Phase 4B, Site Assessment: Agriculture. 1988. Prepared for the Ontario Waste Management Corporation, Toronto, Canada.
Out-migrating farm households - Phase 4B Resident Interviews.

Notes:
1. Includes an estimate of the number of non-interviewed farm households in each scenario.
2. Percentages calculated relative to the total number of farm households in the study area (interviewed and non-interviewed).

BACKGROUND REPORT

HERITAGE ASSESSMENT OF STRUCTURES ON OWMC'S PREFERRED SITE

HISTORICA RESEARCH LIMITED

HERITAGE ASSESSMENT OF STRUCTURES ON OWMC'S PREFERRED SITE

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January, 1988

Heritage Assessment of Structures on OWMC's Preferred Site

by
Historica Research Limited

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Letter of Transmittal

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1. BACKGROUND

In December of 1985, Historica Research Limited submitted a report to the Ontario Waste Management Corporation (OWMC).* The report documented the evaluation of the relative heritage significance of eight potential sites for the proposed OWMC industrial and hazardous waste treatment and disposal facility.

During this Phase 4A study over 600 structures on eight candidate sites were inventoried. Both the facility site area and a zone of approximately two kilometres surrounding each site were examined. Because of the large number of structures, no attempt was made to provide detailed descriptive histories of identified structures. The report made recommendations for further study of the preferred site once it had been selected.

The Phase 4A site selection process resulted in a site in the Township of West Lincoln, Regional Municipality of Niagara, being selected as the preferred site for the waste management facility. The Phase 4A heritage study had identified two houses and two barns of potential historic significance on this property (Figure 1).

In the Phase 4B site assessment, technical studies of the preferred site were conducted. This report provides a detailed heritage evaluation of individual buildings. This follows a recommendation from Phase 4A.**

In the Phase 4A study, emphasis was placed on evaluating heritage landscapes within the candidate sites. In October, 1986, Historica Research undertook Phase 4B level research of heritage landscapes in the vicinity of the preferred site for the visual consultants.* This work indicated that many vestiges of former historic landscapes - such as fence lines and wood lots - were still prominent in the area.

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* Historica Research Limited, Site Selection Process Phase 4A: Selection of a Preferred Site (s) - Social Analysis, Appendix Volume 2 Heritage Assessment. Toronto: OWMC, 1985.

** ibid., p. 59.

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* EDA Collaborative Inc., Site Assessment Phase 4B: Visual Impact. Prepared for OWMC, September, 1987.

2. STUDY METHODS

Relevant reports undertaken for OWMC were examined for this study. The Phase 4B study of archaeology and early history was of particular value.* Information from various archives and collections were examined including the land registry office, St. Catharines, the special collections room of the St. Catharines Public Library, and the Archives of Ontario, Toronto.

The OWMC refers to houses on the preferred site by using the name of the current owner. This report, however, names structures after their assumed builder. Therefore the Flameling and Morningstar houses are referred to respectively as the Phillips and Beamer houses. This is in keeping with the historian's nomenclature for buildings which assumes that the name of the original owner is fixed whereas the name of the present owner is always changing.

A field survey of the interior and exterior of the Phillips (Flameling) and Beamer (Morningstar) houses was conducted on December 9, 1987. Based on research and field work, the buildings were evaluated for their historic and architectural significance. This information was then used to prepare site specific recommendations.

Accurate dating of the construction of the two houses identified in this study proved impossible. Although many sources can be used to date historic buildings, none of these methods were applicable to the study buildings. Typically census records, assessment rolls, building permits, local histories, newspaper accounts, family records, and oral histories can be used to aid in dating a building.

The Museum of Indian Archaeology report contained some family and oral records regarding the buildings. Local histories provided no dating evidence for the buildings and building permits were not available for that period.

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* Museum of Indian Archaeology, Site Assessment Phase 4B: Archaeology and Early History. Prepared for OWMC, August, 1987.

The only sources that could have provided accurate dates were census records and assessment rolls.

Census records for Gainsborough Township list building information only in the 1861 and 1871 census. The 1861 census does not have information pertaining to Calvin Beamer, although he is listed in the assessment rolls for the same period. The 1871 census has information about the number of dwellings on each site, but does not specify the size and type of building.

Assessment rolls can be used sometimes to determine the presence of a new structure by assuming that the value of the property would increase dramatically if a new building were erected. The value of both Beamer's and Phillip's property did increase substantially from 1886 to 1887 by 61% and 58% respectively, but the assessment for the school district increased by 50%, and whole township increased by 49%. Therefore, the increase in value of the two lots is not that significant. It is also difficult to determine a real increase in Beamer's property because by 1877 his assessment base was changed from 50 acres to 75 acres.

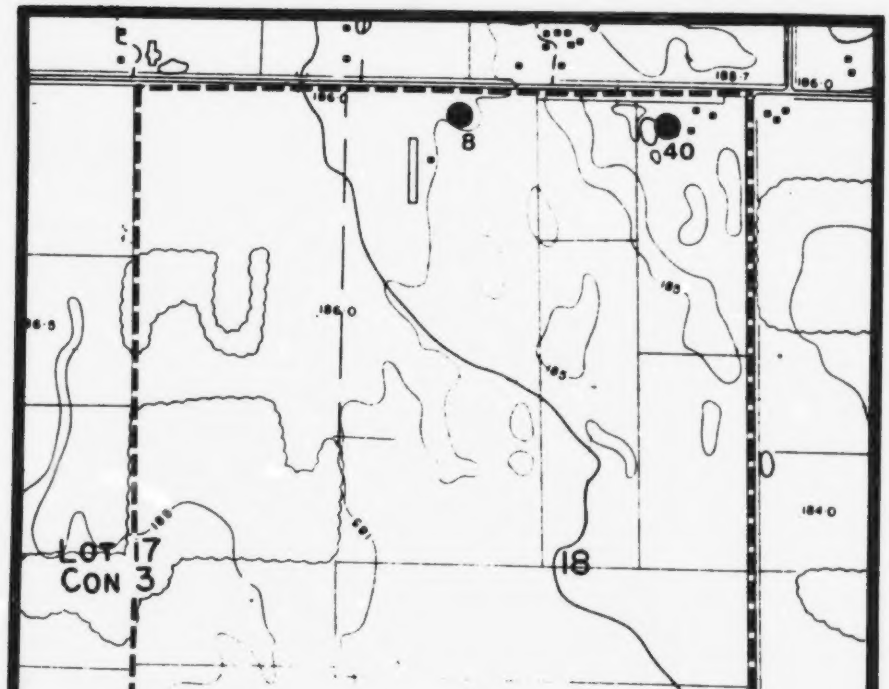
Dating of the two buildings in this report relies on the architectural styles of the buildings. Although the building styles were not sufficiently distinctive to provide accurate dates, the consultant believes that the combination of historical records and buildings styles provides a rough construction date of within 10 to 15 years.

The upstairs of the two houses were not examined. The consultant believes that significant architectural and structural features would be found in the basement and ground floor but not on the second floor. As well, avoiding the second floor minimized any inconvenience to the property owners and tenants.

Figure One: Preferred Site

8	Beamer (Morningstar) House
31	Phillips (Flameling) House
39	Barn (burned 1987, no longer standing)
40	Barn

Source: Historica Research Limited, Site Selection Process Phase 4A: Selection of a Preferred Site (s) - Social Analysis, Appendix Volume 2 Heritage Assessment. Toronto: OWMC, 1985.



3. HISTORY AND DESCRIPTION OF BUILDINGS

3.1 Selection of Buildings

The Phase 4A heritage study identified four potential structures of interest on the preferred site - two houses and two barns. One barn (map #39) burned in 1987 and therefore prohibited its inclusion in this study. The other barn (map #40), when surveyed during the field work was considered to be of minimal historical and architectural significance. Although it contributes to the heritage landscape, the building was not evaluated.

3.2 Phillips (Flameling) House

(SE¼, lot 17, Con III)

Thomas Phillips was farming the southeast quarter of Lot 17 Con III by 1861 but did not acquire title to the property until 1863. Census data indicates that the property contained a one story log house in 1861 that, by 1871 had been replaced by a 1½ storey frame house. The Museum of Indian Archaeology assumes that the Thomas Phillips family were the first people to build a house and reside on the property. An 1876 map shows a house in approximately the same location as the present structure.*

In 1891, Thomas Phillips transferred ownership to his son Thomas, Jr. The property was sold again in 1911 to John Hill who in turn sold it in 1929 to William Anderson. The current owner of the property, Ype Flameling purchased the property in 1954 from the Anderson's.

The house presents no dominant architectural qualities that give it regional significance or make the building distinctive. It is reminiscent of many similar buildings located throughout southern Ontario. The aluminum siding and absence of any decorative wood trim make the building rather plain. The aluminum siding was placed over insul brick in the 1950s.

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* H.R. Page (ed), Illustrated Historical Atlas of the Counties of Lincoln & Welland. Toronto: H.R. Page, 1876, reprint 1971.

The house consists of three components - a 1½ storey block, a single story section attached on the east side, which in turn is attached to a large shed (Figure 2). The main building is about 45 feet long and 30 feet wide. The shed is approximately 20 feet square.

The roof of the 1½ storey addition is of medium pitch while that of the one storey section is very shallow. No wood trim exists along the eaves as the soffits and fascia are aluminum siding. The roof is asphalt shingle. A red brick chimney is located in the middle of the 1½ storey addition. It appears to be of recent origin.

A small projection on the front contains the front door. The staircase leading to the front door is made of cast concrete.

The windows provide the main architectural character to the house. Most consist of three vertical panes in the upper sash and a large single pane in the lower. The windows on the one story block are placed in a ribbon pattern on both the north and south facade. Those on the south side open into an enclosed porch.

Two small fixed windows are on the west side off the living room. A large gable dormer on the west side of the roof contains another small window of six panes. The small window is out of proportion to the size of the gable. Formerly there may have been larger windows in the dormer but any evidence is obscured by the aluminum siding.

The exterior foundation is made of rusticated concrete blocks popular in the early 20th century. The foundation under the shed addition is a poured concrete slab. The basement contains a new poured concrete foundation and floor, dating from the 1950s.

The ground floor interior appears to date from a 1950s remodeling. The plaster ceiling in the dining room has a cove molding and a swirl pattern on the ceiling. The ground floor woodwork is varnished and in very good condition.

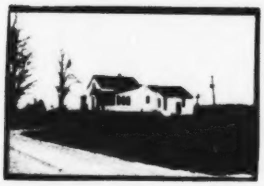
The addition to the northeast side is a large single storey shed. It covers the entrance to the basement and a cistern. The windows in the addition are simple single pane double hung. A small window high in the gable end is a fixed pane of glass. A narrow eight inch slit doorway is to the left of the main door. When opened the laundry can be hung inside and wheeled outwards.

While no documentary evidence could determine the construction dates for the building, the design of the building suggests that it was built circa 1900 - 1920. The concrete block foundation, style of windows and shallowness of the one storey roof are the main characteristics suggesting this date. The varnished interior woodwork also suggest an early 20th century building. However, it is possible that the 1½ story section could date from the 1870s or earlier and have been extensively remodeled in the early 20th century with a new foundation and the addition on the east side.

The house is close to the road and a complex of barns. Overall, the grouping of buildings strongly conveys the visual image of a working farm.

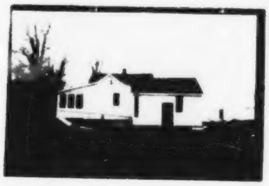
The barn complex consists of two gambrel roof barns joined in a T-pattern. There is a recent metal drive shed between the barns and the house. A concrete silo is situated to the north of the barns. The barn parallel to the road is about 36 feet wide and 54 feet long. It consists of vertical boards on a concrete, poured foundation. The larger barn with its gable end to the road, appears to be the older one. It is about 33 feet wide and 60 feet long, rests on concrete block base and is clad in sheet metal siding.

Figure Two: Phillips (Flameling) House

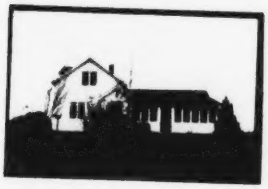


Orientation of house to road

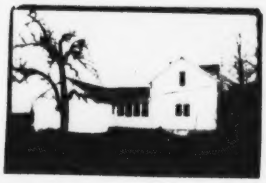
Relationship of barns to house



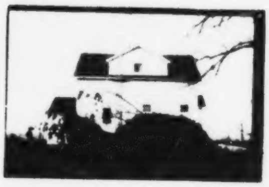
East facade showing shallow roof of one storey building and shed addition



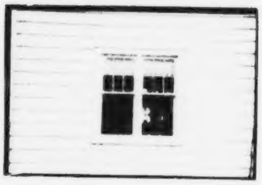
Front (south) facade, showing enclosed porch



North Facade



West facade showing small windows in living room and in dormer window



Typical window detail

3.3 Beamer (Morningstar) House

(NW$\frac{1}{4}$, Lot 18, Conn. III)

Calvin O. Beamer purchased the property in 1871 from Thomas Street. In that year, the property contained a house and barn. Beamer lived on the property until into the 20th century.

The existing 1$\frac{1}{2}$ storey house has been extensively modified. The main building is of brick with some attractive architectural features. It is about 40 to 42 feet long and 28 feet wide. A recent frame double car garage and one storey frame addition have been added to the original building (Figure 3). Some windows of the early building have been bricked in and decorative exterior woodwork removed.

The building is set back about 50 feet from the road. There is no landscaping around the property except for a lawn. However, a number of small trees are planted between the house and the highway.

The roof is of medium pitch. All wood work in the eaves appears to be new and there is no indication of original wood work. The roof is covered in asphalt shingles. A new chimney has been built on the outside of the house on the south facade. There is no sign of where the original chimney might have been located.

The main exterior decorative feature is a two-storey bay window on the front facade. The windows in the bay window projection have a semi-circular arch with decorative keystones and stone lintels - this style is common to most of the windows. The windows on the porch and the second story south wall have very flat arches.

The porch is not original but has been rebuilt recently with a poured concrete floor. However, it is likely that a porch existed in that location on the original plan.

The threshold for the doors and window sills are made of dressed stone. Two doors lead off the porch - one contains a modern door while the other has been closed with styrofoam insulation sheet.

Several changes have been made to the brick walls. On the south facade a ground floor window, or door, has been bricked over. The east facade consists of two ground floor windows of the same semi-circular arch as the front. The west facade originally contained two windows on the ground floor and two on the second floor. The ground floor windows have been blocked in with cement blocks and are obscured by the new garage.

A full basement extends under the brick portion of the house. The foundation is made of masonry with the mortar scored to emphasize the size of the blocks. The blocks are roughly rectangular and about 8 inches tall and 14 inches long. A new concrete floor has been poured.

The first floor has been extensively remodeled within the last 20 years. Staircases to both the basement and first floor are new. The only original features are the ten foot ceiling and some living room baseboards. The windows on the inside contain original heavy wood moulding, perhaps two to three inches thick. There is wood paneling beneath each of the windows in the living room.

A new frame addition has been added to the house's south side. There is a chimney at the south end of the building. The addition is about 18 feet long and 18 feet wide and clad in clap board siding. The addition has a small enclosed porch on the south end.

A double car garage was presumedly constructed at the same time as the frame addition. The garage is about 24 feet wide and 26 to 28 feet deep. It contains the same wooden siding as the addition.

Architecturally, the two storey bay window and the semi circular windows suggest an Italianate influence popular in the 1870s and 1880s. Such a style would have decorative woodwork around the eaves, similar to the Beamer house to the east. The subsequent removal of this decoration may account for the rather austere appearance of the east facade. The roof however, is too steep to be considered Italianate.

The brick is of a common bond pattern. Originally, the brick was red but painted gray at the time the garage was added to the house. The walls appear to be brick veneer over a frame structure. Brick was available in the area from the early 1880s. The nearby brick school house SS #5 was built in 1883. The neighboring Beamer house, on lot 19 Concession three, was built about 1895. Since the brick bond suggests that it is a veneer, it may be that a frame house was built in the 1860s or 1870s. The 1876 Historical Atlas indicates a house on the site of the present building. The building may have been modernized in the latest Italianate style in the 1880s with the addition of brick veneer.* This was not an uncommon activity.

The architecture of the house fits into a regional context. It was one of several brick houses in the area that contain similar design elements. As noted above, the Beamer house on lot 19 was brick. It is an elaborate house with strong Italianate characteristics and used the same red brick. Further east along the north side of Highway 20 is another red brick building with the same semi circular arched windows, keystones and stone lintels. The windows are wider than those on the Beamer (Morningstar) house.

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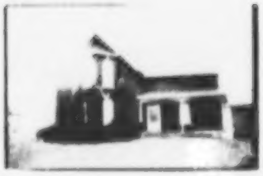
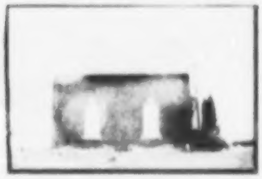
* Museum of Indian Archaeology, Site Assessment Phase 4B: Archaeology and Early History. Prepared for OWMC, August, 1987, page 89.

Figure Three: Beamer (Morningstar) House



Front (north) facade



East facade

Southeast view showing frame addition

Southwest view showing frame addition and garage

West facade

Detail of two storey bay window on front facade

Window details of bay window

4. ANALYSIS

i. Phillips (Flameling) House

The Phillips house is typical of many farm houses found throughout southern Ontario. It likely dates from the early twentieth century although the 1½ storey block may be earlier. The building appears to be in visually good condition and has been maintained with pride by the owners.

The Phillips House is not architecturally or historically unique. The significance of the house is that it does contribute to the landscape character of area. The collection of house and barns and proximity to the road are typical farm landscape.

Although the house is not stylistically interesting, it is typical of 19th and early 20th century farm house architecture. As these buildings become redundant, they are being replaced with new residences that copy suburban house styles. Therefore the character of rural architecture is changing towards urban styles.

ii. Beamer (Morningstar) House

The Beamer house does contain some interesting architectural features, such as the two storey bay window, that give hints to an Italianate influence. But the building has been extensively modified with a new roof, bricked in windows, and removal of decorative exterior woodwork. The recent addition and garage detract from the original architecture of the building. The interior of the building has been totally remodeled although well maintained.

As with the Phillips House, variations of this design can be found throughout southern Ontario. Although it has distinctive architectural features, they are not especially good examples nor unique to the area.

A reason for building significance may extend beyond the architectural importance of the building. For example, an important person or event may have occurred in, or around the structure. The Beamer family was a large family in the area that occupied several farms. But there is no evidence of important people or unique historical events of a regional or provincial nature associated with this house.

5. RECOMMENDATIONS

i. Retention of Buildings on Site

Visually, both houses appear to be in sound physical condition. Although neither is of unique historic or architectural significance, they both contribute to the landscape of the area. Because they are on the periphery of the landfill development, it is recommended that they be left in situ and rented, if possible. Alternatively, a use may be found for these structures by OWMC. Baring reuse of the structures on site, there is no need to make special efforts to retain or conserve these structures.

ii. Architectural Design

Architectural elements reflected in the building styles of structures both on site and in the vicinity should be incorporated, if possible, into buildings that will be seen from the road. Materials, layout of buildings, roof pitch, window and door styles and orientation to the road all contribute to the typical landscape of an area. For example, any gatehouse, interpretive house, or office building that will be viewed publicly should be harmonized architecturally with building styles in the surrounding area.